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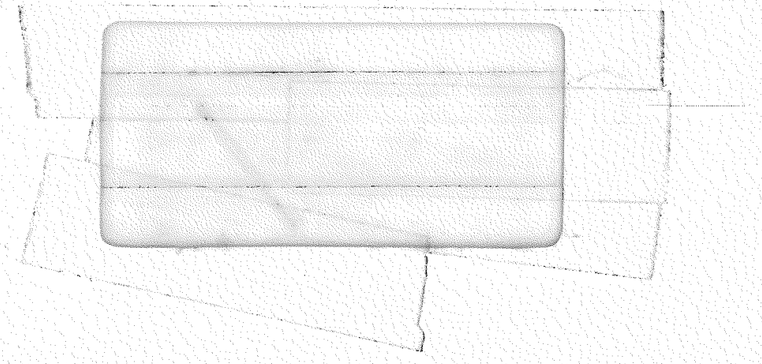
Maynard, Massachusetts

PDP-12 maintenance manual volume III system drawings

laboratory data products



DEC-12-HR1B-D

PDP-12
maintenance manual
volume III
system drawings

DIGITAL EQUIPMENT CORPORATION • MAYNARD, MASSACHUSETTS

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CONTENTS

	Page
PDP-12 SYSTEM DRAWINGS	
Introduction	1
Drawing Nomenclature	1
Size	1
Type	1
Equipment	1
Change Number	1
Drawing Identifier	1
Signal Names	2
Module Identification	2
Logic Symbology	2
Assertion Levels	2
AND, NAND	2
OR, NOR	3
Flip-Flops	3
Redefined Flip-Flops	3
One-Shot Delay	4
Delay Lines	4
Schmitt Trigger	4
Amplifiers	4
Other Functions	5

ILLUSTRATIONS

Figure Number	Art Number	Title	Page
1	12-0181	Drawing Identification Code	1
2	12-0182	AND Gate Symbol, AND Function, and Truth Table	2
3	12-0183	NAND Gate	2
4	12-0184	OR Gate Symbol, OR Function, and Truth Table	3
5	12-0185	NOR Gate	3
6	12-0187	Flip-Flop	3
7	12-0188	"Redefined" Flip-Flop	4
8	12-0189	One-Shot Delay	4
9	12-0190	Delay Line	4
10	12-0191	Schmitt Trigger	4
11	12-0186	Amplifier and Inverters	4

ENGINEERING DRAWINGS

Number	Option
PDP-12-0	PDP-12 System
EP12-0	PDP-12 Processor
EM12-0	Basic 4K Memory
MC12-0	Memory Extension Control
TC12-0	LINC Tape Control
VC12-0	LINC Scope Control
KF12-0	Automatic Priority Interrupt
DM12-0	3 Channel Data Break MUX
KE12-0	Arithmetic Operation
XY12-0	Plotter Control
KT12-0	PDP-12 Time Sharing Option
DP12-A	TTY/Dataphone
DP12-B	TTY/Dataphone (EIA Level)
KP12-0	Power Fail/Restart
KW12-0	Real Time Clock
TC12-F	8 Tape Control
AD12-0	Analog to Digital Converter
AG12-0	A-D Additional Preamps
AM12-0	Expanded Multiplexer
DR12-0	Relays and Control
724-0-1	Power Supply 724
7005983-0-0	Fan Housing Assembly

Foreword

The *PDP-12 Maintenance Manual* published in four separate volumes, is a guide for Field Service Engineers or other personnel involved with the care and maintenance of the PDP-12 Computer. The Maintenance Manual is organized as follows:

VOLUME I PRINCIPLES OF OPERATION

This volume contains a description of PDP-12 logic. An overall view of the system is presented in seven chapters entitled Central Processor, Memory, Input/Output, Teletype, LINC Devices, Tape Processor, and Prewired I/O Bus Options. The text describes logical relationships among the various elements of the PDP-12.

VOLUME II INSTALLATION AND MAINTENANCE

The first chapters of this volume describe the unpacking, installation, and preliminary check-out procedures for the PDP-12. The remainder of the book comprises procedures used in the day-to-day maintenance, adjustment, and repair of the computer.

VOLUME III LOGIC SCHEMATICS

Volume III consists primarily of flow charts and block schematics that describe the PDP-12. The block schematics, lists, and flow charts in Volume III are reduced (11 in. x 17 in.) versions of the engineering drawings.

VOLUME IV MODULE SCHEMATICS

The circuit schematics in Volume IV describe all the module types used in the PDP-12, including both the regular production DEC modules and those designed especially for the PDP-12.

PDP-12 System Drawings

INTRODUCTION

This volume contains all block schematics and flow diagrams for the PDP-12A. The PDP-12A system configuration is the largest of three standard PDP-12 system configurations: PDP-12A, PDP-12B, and PDP-12C. Engineering Drawing D DI PDP-12-0-1 indicates the block schematics and flow diagrams that apply to each particular system configuration. Module circuit diagrams for the PDP-12 are located in Volume 4 of the PDP-12 Maintenance Manual (DEC-12-HR4A-D).

All drawings that appear in this volume are included in the set previously supplied with the equipment. Individual drawings in the original equipment set may differ from those printed in this manual because of changes and updating. In such cases, the original equipment drawings are to be used.

DRAWING NOMENCLATURE

Each DEC drawing is identified by a short descriptive title and a five-part alphanumeric code. An example of the code is given in Figure 1.

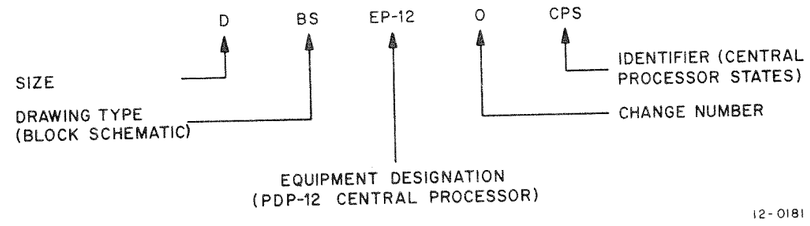


Figure 1 Drawing Identification Code

Size

The first letter indicates the size of the drawing: A, B, C, or D. Size A is the smallest.

Type

The next two letters identify the type of drawing, using the following code:

AD	Assembly Drawing
AR	Arrangement Drawing
BS	Block Schematic (logic and circuitry)
CD	Cable Diagram
CL	Cable List
CS	Circuit Schematic (electrical components)
DI	Drawing Index
FD	Flow Diagram
KS	Key Slot
ML	Master Drawing List
MU	Module Utilization (rack locations)
PL	Parts List
PW	Power Wiring
RS	Replacement Schematic
TD	Timing Diagram
UA	Unit Assembly
WD	Wiring Diagram
WL	Wiring List

Equipment

The third part of the drawing code specifies the device, component, or other discrete part of the PDP-12A to which the information on that drawing applies.

Examples:	VC12	CRT Display Control
	TU55	LINCtape Transport
	7005983	Fan Housing Assembly
	H951	Cabinet Assembly

Change Number

The next digit reflects major design changes in the equipment described on the drawing.

Drawing Identifier

The final portion of the alphanumeric code identifies the drawing itself, either by a three-letter abbreviation or a series number. The abbreviation usually suggests the full title of the drawing.

Examples:	MPG	MEM Page Extn Control
	IPC	Interprocessor Cables

SIGNAL NAMES

Every signal on a block schematic is given a name that identifies the origin, nature, and assertion level of the signal. When the signal originates from a flip-flop, the output side (1 or 0) is given in parentheses.

Examples:

CYI ADD NDX H
The origin of the signal ADD NDX is found on drawing D-BS-EP12-0-CYI. The signal level is HIGH (H) for assertion. If the signal is a pulse, H would indicate that the signal is positive-going.

CPS EXECUTE (1) H
The signal originates from the EXECUTE flip-flop on drawing D-BS-EP12-0-CPS. It is taken from the 1 output and is asserted when that output is HIGH.

MODULE IDENTIFICATION

Inside each logic symbol on a block schematic is a name code. The name code identifies the type of module on which the element is found and the location of that module in the logic rack. The modules are arranged on the rack in two groups in vertical rows, upper (memory) and lower (processor). The rows are identified by capital letters from right to left on the wiring side of the logic rack. The upper rows are labeled, A, B, C, D, E, F; the lower rows are labeled H, J, K, L, M, N.

Each row contains 40 module slots, numbered 1 through 40 from top to bottom.

Example:

M119 H26
This gate is on an M119 DEC module located in row H, slot 26.

Many flip-flops have a descriptive name in addition to a location code.

Example:

CPS FETCH M216 K06; FLK LINK M216 J12.
The first part of a descriptive name identifies the drawing.

All DEC module connector blocks have 18 pin positions. The pin positions are identified by capital letters A through V (G, I, O, and Q are omitted), reading from right to left on the wiring side of the logic rack. All modules used in the PDP-12 are double-sided; thus, each pin position provides two pin terminals. There are a total of 36 connections to each module. On the block schematics, each pin is identified by a letter-number code outside the logic symbol, adjacent to its associated signal. The letter specifies the pin position. The number indicates which side of the module is used (side 1 is the component side).

Examples:

M2	Pin position M, side 2
H1	Pin position H, side 1

Some of the modules used in the PDP-12 are double-width and occupy two slots in adjacent rows of the rack. An individual element on such a module is coded in a normal manner; the location number specifies only the row and slot to which the element is connected. On some drawings (such as those for the memory axis selectors), an entire circuit is identified collectively; in this case, both slot locations are identified.

Examples:

G611 C06 D06
This double-width module is found at slot 06 in rows C and D.

LOGIC SYMBOLOGY

The logic symbols used in these drawings conform basically to MIL-STD-806B.

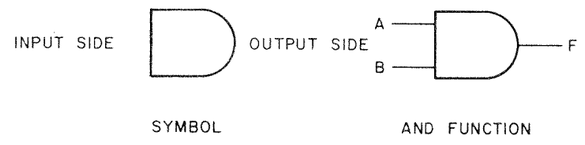
Assertion Levels

In the truth tables, H represents a HIGH (+3V) assertion level or a positive-going pulse, and L represents a LOW (0V) level or a negative-going pulse.

On the drawings, a small circle at the input to a function indicates that the signal must be LOW for assertion. If there is no circle, the assertion level is HIGH. Similarly, a small circle at the output of a function indicates that the output level is LOW when the function is TRUE. If there is no circle, the TRUE output is HIGH.

AND, NAND

Figure 2 shows the symbol for an AND gate and the general form of a pure AND function. The output of an AND function is HIGH only if all the inputs are HIGH.

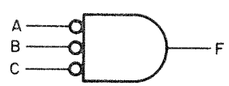


A	B	F
L	L	L
L	H	L
H	L	L
H	H	H

12-0182

Figure 2 AND Gate Symbol, AND Function, and Truth Table

Figure 3 shows a 3-input version of a NAND (Negated AND) function. The output is LOW only if all inputs are HIGH.



INPUT			OUTPUT
A	B	C	F
L	L	L	H
L	L	H	L
L	H	L	L
L	H	H	L
H	L	L	L
H	L	H	L
H	H	L	L
H	H	H	L

12-0183

Figure 3 NAND Gate

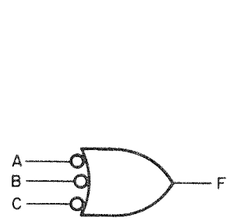
OR, NOR

Figure 4 shows the symbol for an OR gate and the general form of a pure OR function. The output of an OR function is HIGH if any or all inputs are HIGH.

A	B	F
L	L	L
L	H	H
H	L	H
H	H	H

Figure 4 OR Gate Symbol, OR Function, and Truth Table

Figure 5 shows a 3-input version of the NOR (Negated OR) function. The output is HIGH when any or all inputs are LOW.



INPUT			OUTPUT
A	B	C	F
L	L	L	H
L	L	H	H
L	H	L	H
L	H	H	H
H	L	L	H
H	L	H	H
H	H	L	H
H	H	H	L

12-0185

Figure 5 NOR Gate

Note that the NOR truth tables are the same as those for NAND; however, the signal levels are reversed. Different gates are used for design convenience and circuit function simplification. A NOR gate is used to emphasize that any input or combination of inputs will activate the function (make it TRUE). A NAND gate is used to emphasize that all inputs must be asserted to activate the function. The NOR and NAND gates are schematic representations of DeMorgan's Law.

Flip-Flops

Figure 6 illustrates a flip-flop. A flip-flop has four inputs: SET (S), RESET (R), DATA (D), and CLOCK (C). Each flip-flop has two outputs, 1 and 0. The flip-flop is bistable; it remains in one of its two logic states (1 or 0) until an input condition causes it to change.

A flip-flop is set to the 1 state if either of the following conditions occurs:

a. A negative-going pulse appears at the SET input.
b. The DATA input is HIGH, and a positive-going pulse appears at the CLOCK input.

A flip-flop is set to the 0 state if either of the following conditions occurs:

a. A negative-going pulse appears at the RESET input.
b. The DATA input is LOW, and a positive-going pulse appears at the CLOCK input.

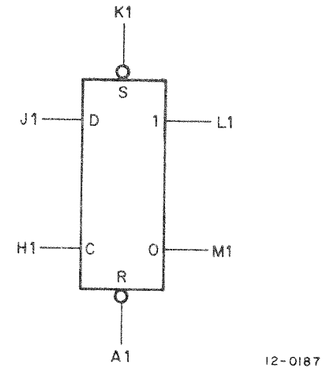


Figure 6 Flip-Flop

When a flip-flop is in the 1 state, the 1 output is HIGH and the 0 output is LOW. When a flip-flop is in the 0 state, the 0 output is HIGH and the 1 output is LOW.

Redefined Flip-Flops

Figure 7 illustrates a "redefined" flip-flop. The redefined flip-flop is physically identical to the flip-flop shown in Figure 6. The difference, however, is the manner in which the inputs: S (SET), R (RESET), and D (DATA) and the outputs: 1 and 0 are logically defined. In Figure 7, note that the pin numbering of the S and R inputs and the 1 and 0 outputs are opposite those shown in Figure 6; in addition, the D input is shown with a small circle to indicate that a low signal enables the change of state, thereby identifying the flip-flop as redefined.

Normally, the S and R inputs of a redefined flip-flop are high; a change from a high state to a low state at either of these inputs causes the flip-flop to SET or RESET respectively. If the D input is LOW and a pulse is applied to the C input, the redefined flip-flop goes to its logical 1 (SET) state and, conversely, to 0 (RESET) in the opposite case.

One-Shot Delay

The symbol for a one-shot delay function is shown in Figure 8. When the delay is not activated, it remains in the 0 state, and the output is LOW.

When any of the inputs goes from HIGH to LOW (level change or pulse), the output goes HIGH and remains HIGH until the specified delay time has elapsed. The delay-time range can be determined from the pin connections and the proper table in the DEC Logic Handbook (M302 module).

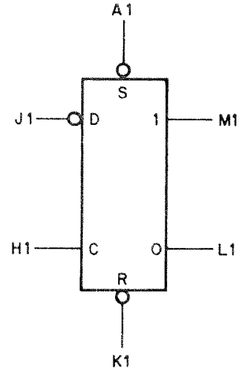


Figure 7 "Redefined" Flip-Flop

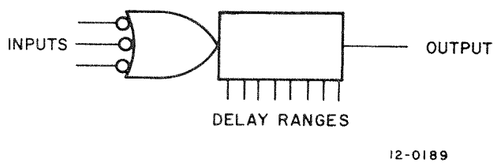


Figure 8 One-Shot Delay

Delay Lines

The symbol in Figure 9 represents a tapped delay line.

The outputs are arranged in two rows, from left to right: J2 to N2 on the top, and P2 to U2 on the bottom. The taps provide delays from 50 ns (J2) to 500 ns (U2) in 50 ns steps.

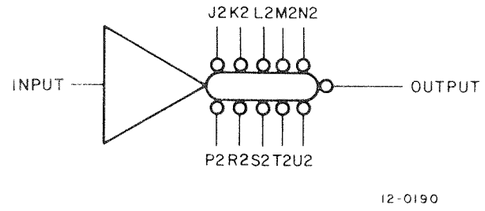


Figure 9 Delay Line

Schmitt Trigger

The symbol for a Schmitt Trigger function is shown in Figure 10.

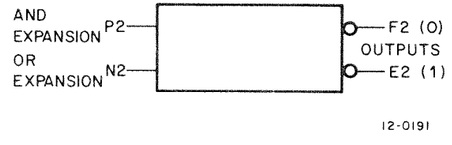


Figure 10 Schmitt Trigger

When the function is inactive, the 0 output is HIGH, and the 1 output is LOW. When the input level rises from below the lower voltage threshold to above the upper voltage threshold, the outputs reverse state. The outputs remain in this state until the input voltage falls below the lower voltage threshold again.

Amplifiers

The symbol in Figure 11 represents a current or voltage amplifier.

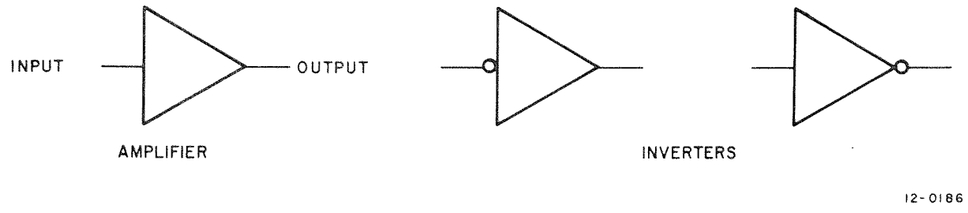


Figure 11 Amplifier and Inverters

If a small circle appears at either the input or output (but not both), the gate functions as a signal inverter.

Other Functions

A rectangle is used to represent many circuit functions (such as pulse amplifiers, inhibit drivers, clocks, etc.). Normally the circuit context or the element name clarifies the function intended. For specific uses, refer to the particular module schematic in Volume 4 of this manual, or to the DEC Logic Handbook.

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MASTER DRAWING LIST

DWG. NO.	REV. LET.	NO. OF SHEETS	TITLE
D-UA-PDP 12-0-0	M	4	PDP 12 SYSTEM
A-PL-PDP 12-0-0	M	4	PDP 12 SYSTEM (PARTS LIST)
D-DI-PDP 12-0-1	Y	5	DRAWING INDEX
D-AR-PDP 12-0-2	H	5	PDP 12 CONFIGURATION
D-IC-PDP 12-0-3	A	1	POWER WIRING & SIGNAL CABLES
~~A-SP-PDP 12-0-4~~	~~—~~		~~SHIPPING & INSTALLATION SPEC~~
A-SP-PDP 12-0-5	REF	23	ACCEPTANCE SPEC.
A-SP-PDP 12-0-6	REF	1	SYSTEM SPECIFICATIONS
A-AL-PDP 12-0-7	REF	1	HARDWARE KIT
A-SP-PDP 12-0-8	REF	1	SPARE PARTS
A-SL-PDP 12-0-9	REF	5	SOFTWARE KIT
D-FD-PDP 12-0-10	E	1	MANUAL TIMING FUNCTION PART 1
D-FD-PDP 12-0-11	B	1	MANUAL TIMING FUNCTION PART 2
D-FD-PDP 12-0-12	D	1	LINC FETCH 1A
D-FD-PDP 12-0-13	E	1	LINC FETCH 1B
D-FD-PDP 12-0-14	C	1	LINC FETCH 2
D-FD-PDP 12-0-15		1	LINC DEFER
D-FD-PDP 12-0-16	B	1	LINC EXECUTE
D-FD-PDP 12-0-17	B	1	LINC EXECUTE
D-FD-PDP 12-0-18	C	1	LINC EXECUTE
D-FD-PDP 12-0-19	A	1	LINC EXECUTE
D-FD-PDP 12-0-20	B	1	EXECUTE 2 & INTERRUPT
D-FD-PDP 12-0-21	B	1	PDP-8 MODE FETCH
D-FD-PDP 12-0-22	B	1	PDP-8 MODE DEFER & EXECUTE
D-FD-PDP 12-0-23	C	1	BREAK
A-ML-EP12-0	##	2	PDP 12 PROCESSOR
A-ML-EM12-0	#	1	BASIC 4K MEMORY
A-ML-MC12-0	#	1	MEMORY EXTENSION CONTROL
A-ML-TC12-0	##	2	LINC TAPE CONTROL
A-ML-VC12-0	##	2	DISPLAY CONTROLS
A-ML-KE12-0	#	2	ARITHEMATIC OPERATION
A-ML-XY12-0	#	1	PLOTTER CONTROL
A-ML-KT12-0	#	1	PDP 12 TIME SHARING OPTION

REVISIONS			
REV.	DATE	CHG. NO.	APP'D.
U	1/70	12-50	L.G.
V	1/70	12-51	L.G.
W	2/70	EP12-20	L.G.
Y	2/70	12-57	L.G.
Z	2/70	12-60	L.G.
AA	2/70	EM12-30	L.G.
AB	2/70	12-64	R.B.
AC	3/70	EM12-35	L.G.
AD	4/70	H950-72	L.G.
AE	4/70	VR12-24	R.B.
AF	6/70	12-73	R.B.
AH	6/70	EP12-23	L.G.
AJ	6/70	12-76	L.G.
AK	7/70	12-79	L.G.
AL	8/70	12-83	L.G.
AM	9/70	12-85	L.G.

DRN. J.Aprea 3/	DATE 10/69	
CHK'D. R.Hutnack	DATE 3/69	
ENG. L. Gale 3	DATE 10/69	
PROJ ENG. L. Gale 3	DATE 10/69	
PROD. L. Gale 3	DATE 10/69	
FIRST USED ON PDP-12		
SCALE		
SHEET 1 OF 2		

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE

PDP-12
SYSTEM

SIZE	CODE	NUMBER	REV.
A	ML	PDP 12-0	A /

DIST.

DEC FORM NO

A

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MASTER DRAWING LIST

DWG. NO.	REV. LET.	NO. OF SHEETS	TITLE
A-ML-DP12-A	~~B~~	1	TTY DATA PHONE
A-ML-DP12-B	#	1	TTY DATA PHONE EIA LEVELS
A-ML-KP12-0	##	1	POWER FAIL/RESTART
A-ML-KW12-0	##	2	REAL TIME CLOCK
~~A-ML-KW12-B~~		~~1~~	~~SIMPLE CLOCK~~
~~A-ML-KW12-C~~		~~1~~	~~SIMPLE CLOCK~~
A-ML-TC12-F	##	1	8 TAPE CONTROL
A-ML-AD12-0	##	1	ANALOG TO DIGITAL CONVERTER
A-ML-AG12-0	##	1	ADDITIONAL PRE-AMPS
A-ML-AM12-0	##	1	MULTIPLEXER EXPANDER
D-CS-724-0-1	#	1	724 P/S SCHEMATIC
D-AD-7005983-0-0	#	2	FAN HSG ASS'Y
C-CS-5408112-0-1	#	1	SWITCH BD. CIRCUIT SCHEMATIC
C-CS-5408114-0-1	#	1	LIGHT BD. CIRCUIT SCHEMATIC
C-CS-5408124-0-1	#	1	RELAY BD. CIRCUIT SCHEMATIC
D-CS-7005963-0-1	#	1	RELAY PANEL CIRCUIT SCHEMATIC
D-CS-7005964-0-1	#	1	ANALOG PANEL CIRCUIT SCHEMATIC
D-CS-7006046-0-1	#	1	ANALOG EXT. PANEL CKT SCHEMATIC
A-PL-SC12-0-0	REF	1	COLOR KITS FOR PDP-12
A-ML-TU56-0	##	1	TU56-0 50/60 HZ
A-ML-VR14-0	REF	1	VR14 50/60 HZ (ANY AC VOLTAGE)
~~A-ML-VC12-C~~	~~#~~	~~1~~	~~COLOR SCOPE CONTROL~~
A-ML-LT33-0	REF	2	ASR-33 TTY
A-ML-KF12-0	#	1	AUTO PRIORITY INTERRUPT
A-ML-AG12-A	REF	1	KNOB/PREAMPS
~~D-BS-AG12-A-03~~	~~REF~~		~~PREAMP/KNOB FOR A-D CHAN Ø-7~~
A-ML-FPP12-0	REF	4	FLOATING POINT PROCESSOR
A-ML-DM12-0	#	1	DATA BREAK MULTIPLEXER
~~A-ML-PDP12-10~~		~~1~~	~~PDP12-10 CONFIGURATION~~
~~A-ML-PDP12-20~~		~~1~~	~~PDP12-20 CONFIGURATION~~
~~A-ML-PDP12-30~~		~~1~~	~~PDP12-30 CONFIGURATION~~
~~A-ML-PDP12-40~~		~~1~~	~~PDP12-40 CONFIGURATION~~
A-SP-724-0-4	#	3	SPECIFICATIONS-724 POWER SUPPLY
A-ML-DR12-0	#	1	RELAY BUFFER

REVISIONS			
REV.	DATE	CHG. NO.	APP'D
AN	11/70	12-00088	D.M.
AP	3/71	12-00092	J.S.
AR	4/71	12-00093	J.S.
AS	7/71	12-00095	F.V.
AT	8/71	DM12-51	R.M.
AU	10/71	EP12-[illegible]	R.M.
AV	1/72	12-00099	R.M.

DRN. J.Aprea 3/	DATE 10/69	
CHK'D R.Hutnick	DATE 3/69	
ENG. L.Gale 3	DATE 10/69	
PROJ ENG. L.Gale 3	DATE 10/69	
PROD L.Gale 3	DATE 10/69	
FIRST USED ON PDP-12		
SCALE		
SHEET 2 OF 2		

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE

PDP-12
SYSTEM

SIZE	CODE	NUMBER	REV.
A	ML	PDP 12-0	

DIST.

DEC FORM NO

A

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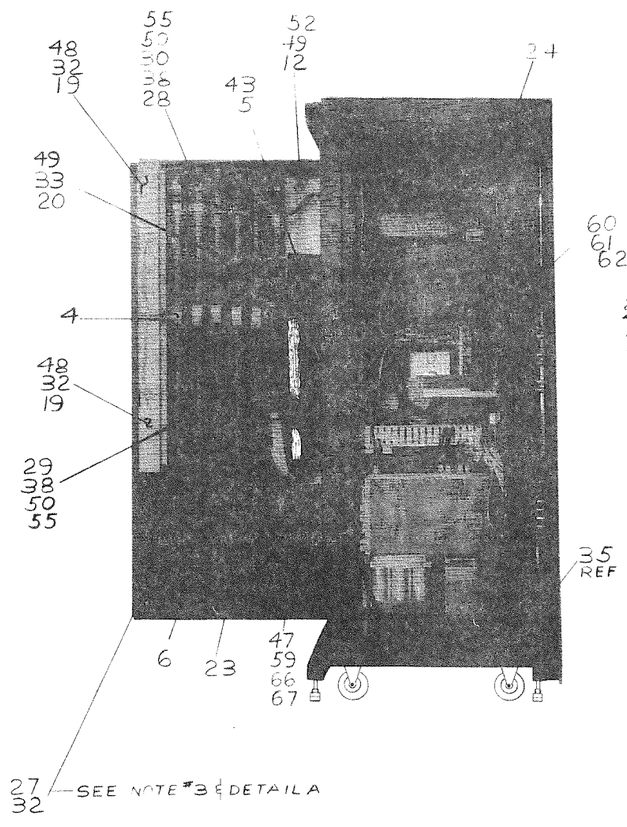
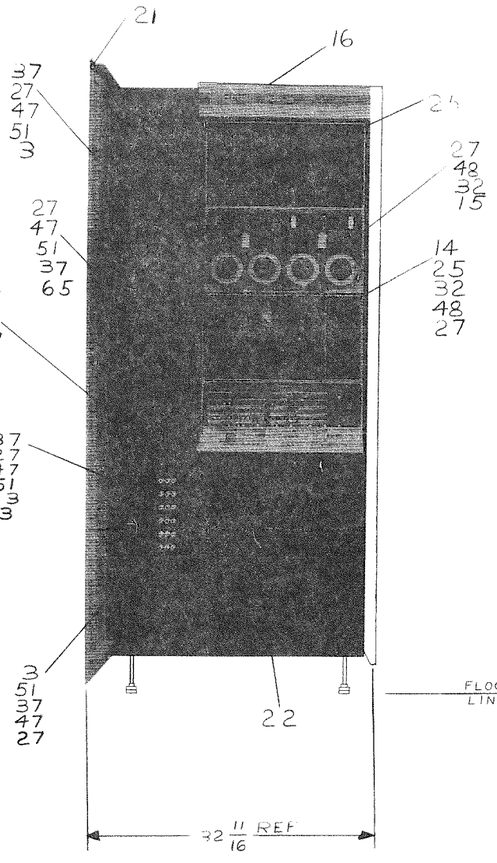
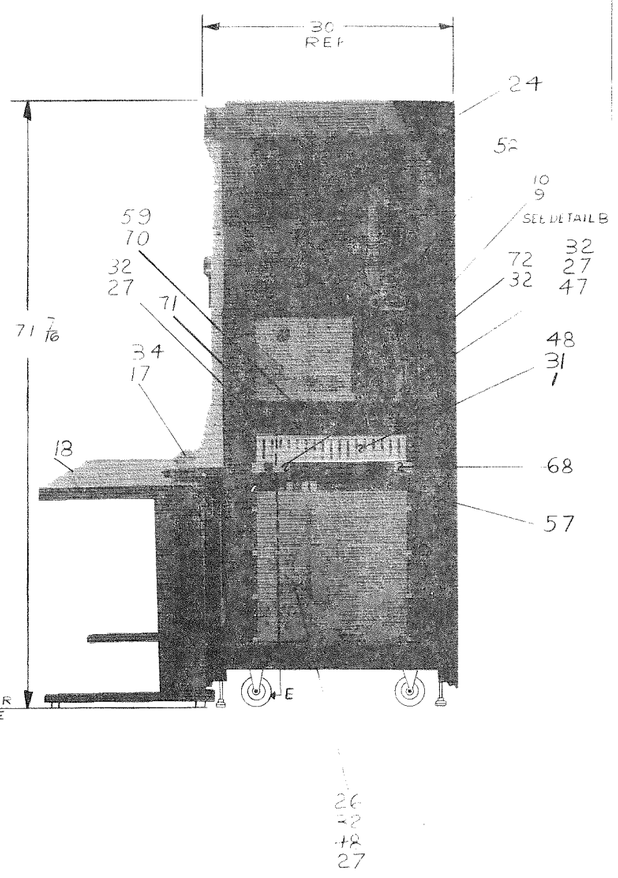
NOTES:
1. FOR DRAWING INDEX LIST SEE DWG. NO. D-LD-PDP12-Ø-1.
2. FOR FINAL EQUIPMENT LAYOUT SEE DWG. NO. D-AR-PDP12-Ø-2.
3. ITEM #6 & 35 USED @ PLACES ON KLAK THENING BRACKARE FOR SHIPPING PURPOSES ONLY.
4. FOR POWER WIRING & SIGNAL CABLE LOCATIONS SEE DWG. D-IC-PDP12-Ø-1.
5. ITEM #57 TO BE USED FOR 240V SYSTEMS ONLY.







REVISIONS			
CHK	CHANGE NO.		REV
	12-00094	REVISED & REDRAWN	K
	12-00095	Release 7-30-71	L
	12-00099		M

PARTS LIST			
QTY.	DESCRIPTION	PART NO.	ITEM NO.

FIRST USED ON OPTION/MODEL: PDP12

DO NOT SCALE DRAWING
UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 | FRACTIONS ± 1/64 | ANGLES ± 0°30'
FINAL SURFACE QUALITY √
REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL /——/
FINISH /——/

DRN.	J FLEMING	DATE 5-22-69
CHK'D.	K KRUSE	DATE 6-5-69
ENG.	[illegible]	DATE 6-11-69
PROJ. ENG.	[illegible]	DATE 6-11-69
PROD.	[illegible]	DATE 6-16-69

NEXT HIGHER ASSY
SCALE NONE
SHEET 1 OF 2

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE: PDP12 ASSEMBLY

SIZE	CODE	NUMBER	REV.
D	UA	PDP12-Ø-Ø	M

DIST.

DEC FORM NO. 1-100

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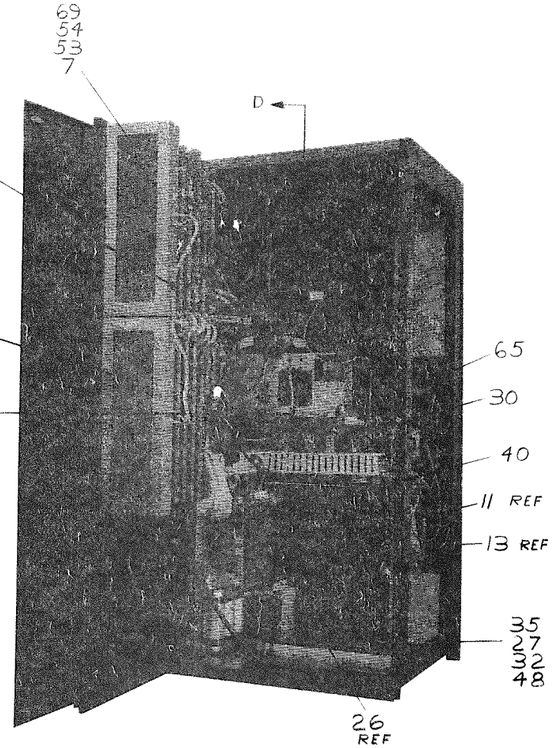
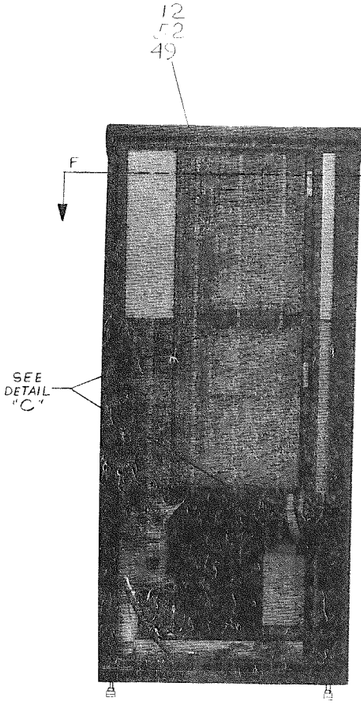
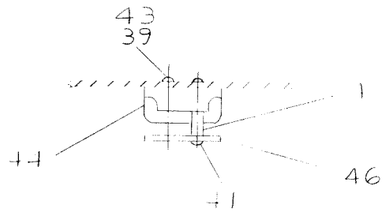


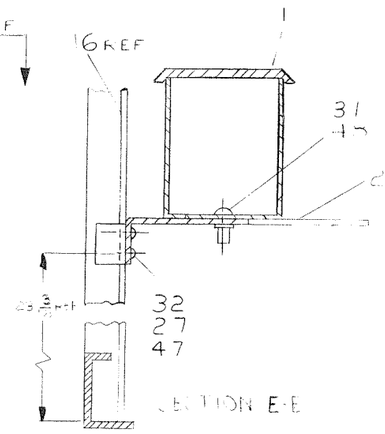
REAR VIEW-DOOR & PLENUM OPEN



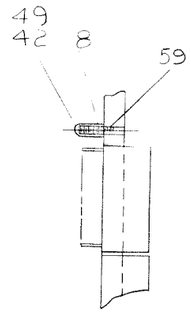
REAR VIEW-DOOR REMOVED



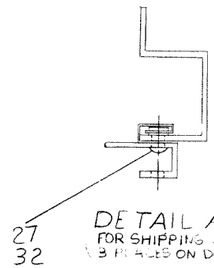
SECTION D-D



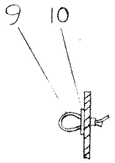
SECTION E-E



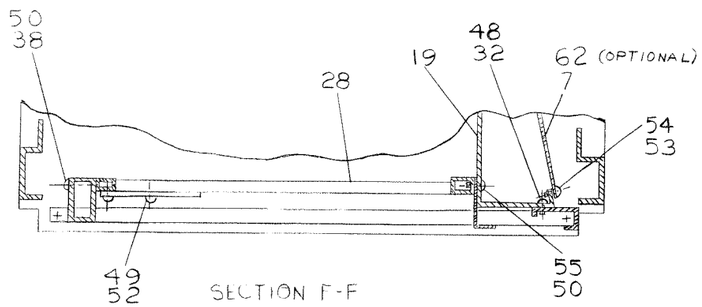
DETAIL C



DETAIL A
(FOR SHIPPING ONLY
3 PLACES ON DOOR)



DETAIL B



SECTION F-F

QTY.	DESCRIPTION	PART NO.	ITEM NO.
	PARTS LIST		

FIRST USED ON OPTION/MODEL: H7P12	DO NOT SCALE DRAWING. UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES: DECIMALS ± .005, FRACTIONS ± 1/64, ANGLES ± 0°30'. FINAL SURFACE QUALITY ✓. REMOVE BURRS AND BREAK SHARP CORNERS.	DRN. J FLEMING — DATE 5-26-69
		CHK'D. K RUSS — DATE 6-5-69
		ENG. L GALE — DATE 8-11-69
		PROJ. ENG. L GALE — DATE 8-11-69
	MATERIAL: /	PROD. D CALL — DATE 8-18-69
		NEXT HIGHER ASSY
	FINISH: /	SCALE NONE — SHEET 2 OF 2

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE: H7P12 ASSEMBLY

SIZE	CODE	NUMBER	REV.
D	UA	H7H12-0-0	M

DIST.

REVISIONS	REV.	CHANGE NO.	CHK.

DEC FORM NO 1-100

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY J. FLEMING	CHECKED K. RUSS	SECTION
DATE 5/15/69	DATE 8/1/69	1
ENG L. Gale	PROD A Cull	ISSUED SECT.
DATE 8/11/69	DATE 8/18/69	1

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	QUANTITY/VARIATION PDP12-A	PDP12-B	PDP12-C	PDP12-10	PDP12-20	PDP12-30	PDP12-40
1	C-MD-7406898-0-0	DUCT CABLE	2	2	2	2	2	2	2
2	C-IA-7406900-0-0	BRACKET, DUCT	2	2	2	2	2	2	2
3	C-MD-7406844-0-0	PANEL BLANK (NARROW)	4	5	5	4	4	3	3
4	C-IA-7006111-0-0	PDP 12 LOGIC CABLES	1	1	1	1	1	1	1
5	1203185-2	PRECISION POWER SUPPLY ±15V	1	1	0	1	1	1	1
6	D-IA-7006186-0-0	CABLE LOGIC POWER	2	2	2	2	2	2	2
7	D-IA-7407277-0-0	SCREEN, FAN	2	2	2	2	2	2	2
8	9008258	SPACER 1/4 AF X 1-3/8 LG #8-32	2	2	2	2	2	2	2
9	9007032	TIE WRAP SST-2-B (PANDUIT)	A/R	A/R	A/R	A/R	A/R	A/R	A/R
10	9006714	WASHER .250 X .500 X .062 THK	A/R	A/R	A/R	A/R	A/R	A/R	A/R
11	D-AD-7005964-0-0	ANALOG PANEL ASSY	1	1	1	1	1	1	1
12	C-IA-7406947-0-0	PANEL, CONN	2	2	2	2	2	2	2
13	D-AD-7005963-0-0	RELAY PANEL ASSY	1	-	-	1	1	1	1
14	D-UA-VR14-Ø-Ø	VR14 DISPLAY	1	1	-	-	1	1	1
15	D-UA-TU56-Ø-Ø	TAPE UNIT TU56	1	1	-	-	1	1	1
~~15~~	~~D-UA-TU55-A-Ø~~	~~TAPE UNIT TU55 (50 HZ)~~	~~2~~	~~2~~					
16	E-AD-7005950-0-0	CAB FRAME ASSY	1	1	1	1	1	1	1
17	E-AD-7005955-0-0	CONSOLE ASSY	1	1	1	1	1	1	1
18	E-AD-7005958-0-0	TABLE ASSY	1	1	1	1	1	1	1
19	D-AD-7005983-0-0	FAN HOUSING ASSY	2	2	2	2	2	2	2
20	C-AD-7006045-0-0	POWER SUPPLY BRKT ASSY	1	1	-	1	1	1	1
21	D-UA-H951-TB-Ø	NARROW DOOR	1	1	1	1	1	1	1

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO.
PDP 12 ASSEMBLY	D-UA-PDP12-Ø-Ø	A	PL	PDP12-Ø-Ø	M	12 00099
	SHEET 1 OF 4	DIST.				

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY J. FLEMING	CHECKED K. RUSS	SECTION
DATE 5/15/69	DATE 8/1/69	1
ENG L. Gale	PROD A Cull	ISSUED SECT.
DATE 8/11/69	DATE 8/18/69	1

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	QUANTITY/VARIATION PDP12-A	PDP12-B	PDP12-C	PDP12-10	PDP12-20	PDP12-30	PDP12-40
22	D-UA-H95Ø-HB-Ø	SHORT DOOR ASSY	1	1	1	1	1	1	1
23	D-UA-H951-BA-Ø	30" FULL DOOR ASSY	1	1	1	1	1	1	1
24	D-UA-H952-A-Ø	END PANEL	2	2	2	2	2	2	2
25	D-UA-H952-Q-Ø	COVER PANEL 10 1/2"	1	1	3	-	1	1	1
26	D-UA-724-Ø-Ø	POWER SUPPLY 724	1	1	1	1	1	1	1
27	9007786	SPEED NUT #10-32 TINNERMANN	69	69	69	69	71	71	71
28	EM12-Ø	BASIC 4K MEMORY	1	1	1	1	1	1	1
29	EP12-0	PDP12 PROCESSOR	1	1	1	1	1	1	1
30	D-IA-7006231-0-0	LINC TAPE D.C PWR HARNESS	1	1	1	1	1	1	1
31	9006071-3	SCR PHL HD TRUSS #10-32 X 3/8 LG	4	4	4	4	4	4	4
32	9006074-3	SCR PHL HD TRUSS #10-32 X 5/8 LG	49	49	49	49	54	54	54
33	9006039-1	SCR PHL HD PAN #8-32 X 1/2 SST	4	4	-	4	4	4	4
34	9006071-2	SCR PHL HD FLAT #10-32 X 3/8 LG	4	4	4	4	4	4	4
~~35~~	~~D-AD-7006060-0-0~~	~~ASSY XFMR MTG PANEL 50 CYCLE ONLY~~	~~1~~	~~1~~					
36	D-IA-7006238-0-0	INTERNAL SCOPE CABLE	1	1	-	1	1	1	1
37	9006712	WASH .250 I.D X .375 OD X .032 THK	24	24	24	24	24	24	24
38	9006063-3	SCR PHL HD TRUSS 1/4-20 X 1 3/4 LG	6	6	6	6	6	6	6
39	9006026-1	SCR PHL HD PAN #6-32 X 3/4 LG	4	4	4	4	4	4	4
40	1201265	POWER CORD	2	2	-	2	2	2	2
41	9006020-1	SCR PHL HD PAN #6-32 X 1/4 LG	2	2	2	2	2	2	2
42	9008208	SCR PHL HD PAN #8-32 X 1/2 LG NYLON	2	2	2	2	2	2	2
43	9006560	NUT KEPS #6-32 SST	8	8	4	8	8	8	8

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO.
PDP 12 ASSEMBLY	D-UA-PDP12-Ø-Ø	A	PL	PDP12-Ø-Ø	M	
	SHEET 2 OF 4	DIST.				

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY J. FLEMING	CHECKED K. RUSS	SECTION 1
DATE 5/15/69	DATE 8/1/69	
ENG L. Gale	PROD D. Call	ISSUED SECT. 1
DATE 8/11/69	DATE 8/18/69	

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	PDP12-A	PDP12-B	PDP12-C	PDP12-10	PDP12-20	PDP12-30	PDP12-40
44	9006902	TERM STRIP #4-541 CINCH JONES	1	1	1	1	1	1	1
45	9006851	SPACER 1/4AF X 1/2 #6-32 AL	2	2	2	2	2	2	2
46	B-MD-7404721-0-0	PROTECTION COVER 541 (4 TERM)	1	1	1	1	1	1	1
47	9006635	WASH INT TOOTH #10	30	30	30	30	30	30	30
48	9007651	WASH EXT TOOTH #10	44	44	44	44	44	44	44
49	9006634	WASH INT TOOTH #8	11	11	11	11	11	11	11
50	9006724	WASH EXT TOOTH 1/4	12	12	12	12	12	12	12
51	9007630-3	SCR PHL HD TRUSS #10-32 X 3/4 BLK PASS	24	24	24	24	24	24	24
52	9006040-1	SCR PHL HD PAN #8-32 X 5/8 LG	9	9	9	9	9	9	9
53	9006022-1	SCR PHL HD PAN #6-32 X 3/8 LG	5	5	5	5	5	5	5
54	9006633	WASH INT TOOTH #6	5	5	5	5	5	5	5
55	9006058-3	SCR PHL HD TRUSS 1/4-20 X 3/4 LG	6	6	6	6	6	6	6
56	E-IA-7006037-0-0	MAIN FRAME HARNESS 120 VAC	1	1	1	1	1	1	1
57	E-IA-7006038-0-0	MAIN FRAME HARNESS DC	1	1	1	1	1	1	1
58	9107673-03	CORD #14/3 WIRE ~~GRY~~	2	2	-	2	2	2	2
59	9006077-3	SCR PHL HD TRUSS #10-32 X 1 LG	4	4	4	4	8	8	8
60	7408322	BRACKET MOUNTING BLOCK	2	2	—	-	2	2	2
61	7408321	MOUNTING BRACKET TU56	1	1	—	-	1	1	1
62	9006073-3	SCR PHL HD TRUSS #10-32 X 1/2 LG	2	2	—	-	2	2	2
~~63~~	~~C-UA-VP12-A-0~~	~~FILTER ASSY~~	~~1~~	~~1~~					
REF	D-IC-PDP12-Ø-3	POWER WIRING & SIGNAL CONN.							
~~64~~	~~1809804~~	~~LABEL, "0" WHITE, MYLAR~~	~~2~~	~~2~~	~~—~~	~~2~~	~~2~~	~~2~~	~~2~~

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV	ECO NO.
PDP 12 ASSEMBLY	D-UA-PDP12-Ø-Ø	A	PL	PDP12-Ø-Ø	M	
	SHEET 3 OF 4	DIST.				

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY J. FLEMING	CHECKED K. RUSS	SECTION 1
DATE 5/15/69	DATE 8/1/69	
ENG L. GALE	PROD D. CALL	ISSUED SECT. 1
DATE 8/11/69	DATE 8/18/69	

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	PDP12-A	PDP12-B	PDP12-C	PDP12-10	PDP12-20	PDP12-30	PDP12-40
~~65~~	~~D-AD-7006335-0-0~~	~~CLOCK CONTROL PANEL ASSY~~	~~—~~	~~—~~	~~1~~	~~—~~	~~—~~	~~1~~	1
66	C-IA-740898Ø-0-0	BRACKET, EXTRUSION	1	1	1	1	1	1	1
67	C-IA-7408981-0-0	BRACKET, HOLDOWN	2	2	2	2	2	2	2
68	7408983	BRACKET, SMALL DUCT	1	1	1	1	1	1	1
69	1205748	FILTER, MESH	2	2	2	2	2	2	2
70	9007772-13	PLASTIC CLAMP, DAKOTA	-	-	-	-	2	2	2
71	D-IA-7409121-0-0	BAR, CABLE MOUNTING	-	-	-	-	1	1	1
72	9007772-9	PLASTIC CLAMP, DAKOTA	-	-	-	-	1	1	1
73	TC12-Ø	LINC TAPE CONTROL	1	1	—	—	1	1	1
74	VC12-Ø	LINC SCOPE CONTROL	1	1	—	—	1	1	1
75	AD12-Ø	ANALOG TO DIGITAL CONVERTER	1	—	—	1	1	1	1
76	KF12-Ø	AUTOMATIC PRIORITY INTERRUPT	—	—	—	—	1	1	1
77	KW12-A	REAL TIME CLOCK	—	—	—	—	—	1	1
78	MC12-Ø	MEMORY EXTENSION CONTROL	—	—	—	—	—	1	1
79	DR12-Ø	RELAY BUFFER	1	—	—	1	1	1	1
80	LT33-DC	ASR33 TTY (115V 60HZ)	(1 per 115V 60Hz Systems)						
81	LT33-DD	ASR33 TTY (230V 50Hz)	(1 per 230V 50Hz Systems)						
82	LT33-DE	ASR33 TTY (100V 50Hz)	(1 per 100V 50Hz Systems)						
83	FPP12-O	FLOATING POINT PROCESSOR	—	—	—	—	—	—	1

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV	ECO NO
PDP 12 ASSEMBLY	D-UA-PDP12-Ø-Ø	A	PL	PDP12-Ø-Ø	M	
	SHEET 4 OF 4	DIST.				

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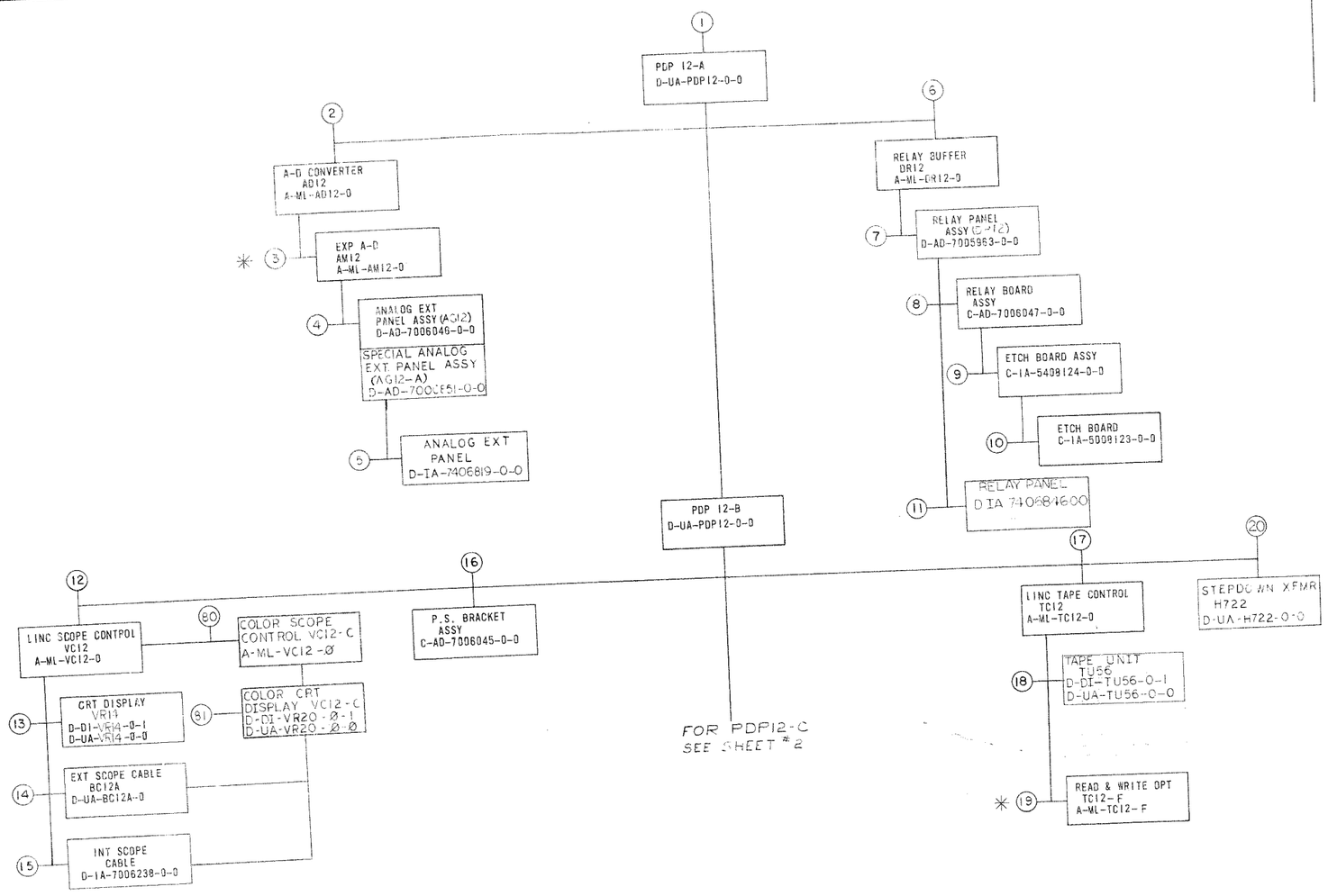
NOTES:
1. * ASTERISK INDICATES OPTIONS AVAILABLE.
2. LETTER DESIGNATION ABOVE BLOCK INDICATES THAT PART IS USED ONLY ON THAT SYSTEM WITH SAME LETTER DESIGNATION.



QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

FIRST USED ON OPTION/MODEL: PDP12

DO NOT SCALE DRAWING

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINAL SURFACE QUALITY √
REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL

FINISH

		DATE
DRN.	J F Gray	5-29-69
CHK'D.		DATE
ENG.	Gale	DATE 8/11/69
PROJ. ENG.	Gale	DATE 8/11/69
PROD.	Al Cook	DATE 9/2/69

NEXT HIGHER ASSY: A-ML-PDP12-0

SCALE

SHEET 1 OF

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: DRAWING INDEX LIST (PDP12)

SIZE D | CODE DI | NUMBER PDP12 - 0 - 1 | REV Y | DIST.

REVISIONS				
CHK	CHANGE NO	REV		
	12-00031	A	D. NEVALA	
	12-00032	B		
	12-00034	C		
	12-00035	D		
	12-00040	E		
	12-00050	K		
	12-00055	L		
	12-00064	M		
	EM12-00035	N		
	H950-00001	P		
	12-00024	R		
	12-00083	S		
	12-00088	T		
	12-00093	U		
	MISC-00086	V		
	EM12-00051	W		

SEE SHEET 2

DEC FORM NO. DRD 100

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1 PDP 12-C
D-UA-PDP12-0-0

21 CAB FRAME ASSY
E-AD-7005950-0-0

22 CONSOLE ASSY
E-AD-7005955-0-0

37 TABLE ASSY
E-AD-7005959-0-0

38 FAN HOUSING ASSY
D-AD-7005983-0-0

39 H951-T8 NARROW DOOR
D-UA-H951-T8-0
D-DI-H951-0-1

40 H950-H8 SHORT DOOR ASSY
A-PL-H950-H8-0
D-DI-H950-0-1

41 H951-BA FULL LENGTH DOOR
A-PL-H951-BA-0
D-DI-H951-0-1

42 H952-A END PANEL
A-PL-H952-A-0
D-DI-H951-0-1

47 H950-Q COVER PANEL
A-PL-H950-Q-0
D-DI-H950-0-1

44 POWER SUPPLY 724
D-UA-724-0-0

45 UPPER MTG PANEL ASSY
D-AD-5408232-0-0

23 H951 AA30" CAB
E-UA-H951-AA-0
D-DI-H951-0-1

24 H952-C FAN ASSY
A-PL-H952-C-0
D-DI-H952-0-1

25 H952-F LEVELER SET
A-PL-H952-F-0
D-DI-H952-0-1

26 H952-E CASTER SET
A-PL-H952-E-0
D-DI-H952-0-1

27 PANEL LOGO PDP12
C-IA-7406933-0-0

28 INLAY PANEL
C-IA-7406847-0-0

30 SWITCH BOARD ASSY
D-IA-7006009-0-0

31 SWITCH BOARD (CONSOLE)
D-AD-5408112-0-0

32 ETCH BOARD SWITCH
D-IA-5008111-0-0

33 INDICATOR PANEL
D-IA-7406915-0-0

34 LIGHT BOARD ASSY
D-AD-7006008-0-0

35 LIGHT BOARD (CONSOLE)
D-IA-5408114-0-0

36 ETCH BOARD LIGHT (CONSOLE)
E-IA-5008113-0-0

51 LOGIC POWER CABLE
D-IA-7006166-0-0

52 POWER CONN G780
C-UA-G780-0-0

53 ANALOG PANEL ASSY
D-AD-7005964-0-0

54 ANALOG PANEL
D-IA-7406845-0-0

55 BASIC 4K MEMORY EM12
A-ML-EM12-0

56 LOGIC FRAME ASSY MEMORY (EM12)
D-AD-7005979-0-0

57 MTG BAR ASSY
D-IA-7406100-00

59 PDP12 PROCESSOR EP12
A-ML-EP12-0

60 LOGIC FRAME ASSY (EP12)
D-AD-7005976-0-0

57 MTG BAR ASSY
D-IA-7406100-0-0

46 HEAT SINK ASSY
D-AD-5408298-0-0

47 CONN ASSY HEAT SINK
C-IA-5408291-0-0

48 ETCH BOARD HEAT SINK
C-IA-5008293-0-0

49 CONN. FILTER CAP
C-IA-5408292-0-0

50 ETCH BOARD FILTER CAP
C-IA-5009294-0-0

61 PLOTTER CONTROL XY12
A-ML-XY12-0-0-0

62 REAL TIME CLOCK KW12A
A-ML-KW12-Ø

63 CLOCK CONTROL PANEL ASSY
D-AD-7006335-0-0

64 CLOCK CONTROL PANEL
D-MD-7407414-0-0

65 EXT MEMORY CONTROL MC12
A-ML-MC12-0

66 ADD 4K MEMORY MM81-A
A-ML-MM81-A-0

67 ARITHMATIC OPERATION KE12
A-ML-KE12-0

68 PWR FAIL RESTART KP12
A-ML-KP12-0

69 TTY DATA PHONE DP12-A
A-ML-DP12-A

70 TTY DATA PHONE DP12-B
A-ML-DP12-B

71 TIME SHARING KT12
A-ML-KT12-0

73 SIMPLE CLOCK KW12-B
A-ML-KW12-Ø

74 SIMPLE CLOCK KW12-C
A-ML-KW12-Ø

76 DATA BREAK MULTIPLEXER
A-ML-DM12-Ø

78 I/O ACCESS PANEL
A-ML-H309-0

80 COLOR DISPLAY CONTROL
A-ML-VC12-C

81 COLOR DISPLAY
A-ML-VR20-0

82 611/601 SCOPE CONTROL
A-ML-VC12-5

79 ANALYTICAL INSTRUMENTATION PACKAGE
A-ML-AIP12-0

REVISIONS			
CHK	CHANGE NO.	REV.	
R. MOORE	12-00099	Y	2-2-73

DEC FORM NO DMD 100

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

FIRST USED ON OPTION/MODEL: PDP12

DO NOT SCALE DRAWING

UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
DECIMALS = .005 FRACTIONS = 1/64 ANGLES = 0°30'
FINAL SURFACE QUALITY √
REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL —

FINISH —

DRN.		DATE
CHK'D.	[illegible]	DATE 8/11/69
ENG.	[illegible]	DATE 8/11/69
PROJ. ENG.	[illegible]	DATE 8/11/69
PROD.	[illegible]	DATE 8/11/69

NEXT HIGHER ASSY

SCALE —

SHEET 2 OF 5

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
DRAWING INDEX LIST (PDP12)

SIZE	CODE	NUMBER	REV.
D	DI	PDP12 - Ø - 1	Y

DIST.

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PDP12-40
A-ML-PDP12-40

77 → FPP12
A-ML-FPP12-0

PDP12-30
A-ML-PDP12-30

62 → KW12-A
REAL TIME CLOCK
A-ML-KW12-Ø

63 → D-AD-7006335-0-0
CLOCK PANEL

65 → MC12
EXT MEMORY CONTROL
A-ML-MC12-Ø

PDP12-20
A-ML-PDP12-20

18 → TU56
DUAL TRANSPORT
D-DI-TU56-0-1
D-UA-TU56-0-0

17 → TC12
LINE TAPE CONTROL
A-ML-TC12-Ø

PDP12-10
A-ML-PDP12-10

12 → VC12
LINE SCOPE CONTROL
A-ML-VC12-Ø

73 → VR14
CRT DISPLAY
D-DI-VR14-Ø-1
D-UA-VR14-Ø-Ø

75 → KF12
AUTO PRIORITY
INTERRUPT
A-ML-KF12-Ø

2 → AD12
A-D CONVERTOR
A-ML-AD12-Ø

4 → AG12
ANALOG-EXT
PANEL (AG12)
D-AD-7006046-0-0

5 → ANALOG-EXT
PANEL
D-IA-7406819-0-0

TO PDP12-C
PAGE 2 OF 5

6 → DR12
RELAY BUFFER
A-ML-DR12-Ø

7 → RELAY PANEL
ASSY (DR12)
D-AD-7005963-Ø-Ø

11 → RELAY PANEL
D-IA-7406846-Ø-Ø

8 → RELAY BOARD ASSY
C-AD-7006047-Ø-Ø

9 → ETCH BOARD ASSY
C-IA-5108124-Ø-Ø

10 → ETCH BOARD
C-IA-5008123-Ø-Ø

REVISIONS	REV	CHANGE NO	CHK

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP12		PARTS LIST		

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES
DECIMALS: .XXX = .005, .XX = .02, .X = .1 — ANGLES: ±0° 30'
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓
MATERIAL —
FINISH —

DRN. J FLEMING	DATE 5-29-69	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
CHK'D K RUSS	DATE 7-21-69	TITLE DRAWING INDEX LIST (PDP12)
ENG. L GALE	DATE 6-11-69	
PROJ. ENG. L GALE	DATE 6-11-69	
PROD. D CALL	DATE 6-18-69	
NEXT HIGHER ASSY.		SIZE D, CODE DI, NUMBER PDP12-Ø-1, REV. Y
SCALE NONE		DIST.
SHEET 3 OF 5		

DEC FORM NO DRD 102-B

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FIND NO	DESCRIPTION	DWG NUMBER	DEPT USAGE PROD	CUST	F/C
1	PDP12 SYSTEM	D-UA-PDP12-0-0			
	PDP12 (PL)	A-PL-PDP12-0-0			
	DUCT, CABLE	C-MD-7406899-0-0			
	BRACKET, DUCT	C-IA-7406900-0-0			
	PANEL BLANK (NARROW)	C-MD-7406844-0-0			
	PDP12 LOGIC CABLE	C-IA-7006111-0-0			
(A+B)	PRECISION POWER SUPPLY	1203185-0-0			
	SCREEN, FAN	D-IA-7407277-0-0			
	PANEL, CONN	C-IA-7406947-0-0			
(A&B)	HARNESS MAIN FRAME 120 VAC	E-IA 7006037-0-0			
	HARNESS MAIN FRAME DC	E-IA-7006038-0-0			
(A&B)	HARNESS LINC TAPE DC PWR	D-IA-7006231-0-0			
	PROTECTION COVER 541 (4TERM)	B-MD-7404721-0-0			
	SHIPPING BRKT TU55	C-MD-7407759-0-0			
2	A-D CONVERTER (AD12)	A-ML-AD12-0			
* 3	EPANDED A-D (AM12)	A-ML-AM12-0			
* 4	ANALOG EXT PANEL ASSY (AG12)	D-AD-7006846-0-0			
	ANALOG EXT PANEL ASSY (PL)	A-PL-7006846-0-0			
	LOGIC DECALS	A-DC-7407193-0-0			
	SPECIAL ANALOG EXT. PANEL ASSY (AG12-A)	D-AD-7006851-0-0			
	SPECIAL ANALOG EXT. PANEL ASSY (PL)	A-PL-7006851-0-0			
5	ANALOG EXT PANEL	D-IA-7406819-0-0			
	ANALOG EXT PANEL SILK SCREEN	C-SS-7406819-0-1			
	BRACKET, CABLE	B-MD-7406901-0-0			
6	RELAY BUFFER (DR12)	A-ML-DR12-0			
7	RELAY PANEL ASSY(DR12)	D-AD-7005963-0-0			
	RELAY PANEL ASSY (PL)	A-PL-7005963-0-0			
	BRACKET, CABLE	B-MD-7406901-0-0			
	CABLE ASSY (G783)	C-IA-7006028-1-0			
	LOGIC DECALS	A-DC-7407193-0-0			
	W/28 CABLE ASSY	D-IA-7007005-0-0			
9	RELAY BOARD ASSY	C-AD-7006047-0-0			
	RELAY BOARD ASSY	A-PL-7006047-0-0			
9	ETCH BOARD ASSY	C-IA-5408124-0-0			
10	ETCH BOARD, RELAY	C-IA-5008123-0-0			
	FLIP CHIP MODULE (BLANK)	D-MD-1402230-0-0			
	ASSY/DRILLING HOLE LAYOUT	C-AH-5408124-0-5			
	PRINTED CIRCUIT LAYOUT	PC-5008123			
11	RELAY PANEL	D-IA-7406846-0-0			
	RELAY PANEL, SILK SCREEN	C-SS-7406846-0-1			
12	LINC SCOPE CONTROL (VC12)	A-ML-VC12-0			
13	CRT DISPLAY	D-UA-VR14-0-0			
	CRT DISPLAY	A-PL-VR14-0-0			
	DRAWING INDEX LIST	D-DI-VR14-0-1			
14	EXT SCOPE CABLE (BC12A)	D-UA-BC12A-0-0			
15	INT SCOPE CABLE	D-IA-7006238-0-0			
	W/28 CABLE ASSY	D-IA-7007005-0-0			
16	P.S. BRACKET ASSY	C-AD-7006045-0-0			
	P.S BRACKET ASSY (PL)	A-PL-7006045-0-0			
	BRACKET, MTG	C-MD-7407059-0-0			
	PRECISION P.S. CABLE	C-IA-7006167-0-0			
	LOGIC DECALS	A-DC-7407193-0-0			
17	LINC TAPE CONTROL (TC12)	A-ML-TC12-0			

FIND NO	DESCRIPTION	DWG NUMBER	DEPT USAGE PROD	CUST	F/C
18	TAPE UNIT (TU56)	D-UA-TU56-0-0			
	TAPE UNIT (TU56) (PL)	A-PL-TU56-0-0			
	DRAWING INDEX LIST	D-DI-TU56-0-1			
	~~TAPE UNIT (TU55-A) (FU)~~	~~D-UA-TU55-A-0~~			
	~~TAPE UNIT (TU55-A) (PL)~~	~~A-PL-TU55-A-0~~			
	~~DRAWING INDEX~~	~~D-DI-TU55-A-13~~			
* 19	READ/WRITE OPT TC12-F	A-ML-TC12-F			
20	XFMR STEPDOWN	D-UA-H722-0-0			
	XFMR STEPDOWN (PL)	A-PL-H722-0-0			
	~~PANEL XFMR MTG~~	~~D-IA-7407072-0-0~~			
	~~COVER PROTECTION (541) 6 TERM~~	~~B-MD-7405436-0-0~~			
21	PDP12 CABINET FRAME ASSY	E-AD-7005950-0-0			
	PDP12 CABINET FRAME ASSY (PL)	A-PL-7005950-0-0			
	POST 19"	D-IA-7406796-0-0			
	DOOR, PLENUM	E-IA-7407648-0-0			
	PIN, DOOR	B-MD-7406672-0-0			
	RETAINER, DOOR PIN	B-MD-7406670-0-0			
	BRACKET CONTROL PANEL R.H.	C-IA-7407093-2-0			
	BRACKET CONTROL PANEL L.H.	C-IA-7407093-1-0			
	PLENUM, SPACER	A-MD-7406268-0-0			
	COVER CONSOLE BOTTOM	C-MD-7407280-0-0			
23	H951-AA30" CABINET ASSY	E-UA-H951-AA-0			
	H951-AA 30" CABINET ASSY	A-PL-H951-AA-0			
	H951 DRAWING INDEX LIST	D-DI-H951-0-1			
24	H952-C FAN	A-PL-H952-C-0			
	H952 DRAWING INDEX LIST	D-DI-H952-0-1			
25	H952-F LEVELER SET	A-PL-H952-F-0			
	H952 DRAWING INDEX LIST	D-DI-H952-0-1			
26	H952-E CASTER SET	A-PL-H952-E-0			
	H952-E DRAWING INDEX LIST	D-DI-H952-0-1			
27	PANEL, LOGO PDP12	C-IA-7406933-0-0			
	PANEL FRAME H950-L	D-UA-H950-L-0			
	H950 DRAWING INDEX	D-DI-H950-0-1			
28	PANEL INLAY PDP12	C-IA-7406847-0-0			
	LOGO (BRITE CHARTREUSE)	C-SS-7406847-0-1			
	LOGO (LIME PEEL)	C-SS-7406847-0-2			
29	CONSOLE ASSY	E-AD-7005955-0-0			
	CONSOLE ASSY (PL)	A-PL-7005955-0-0			
	COVER, SWITCH	D-MD-7407173-0-0			
	BEZEL, CONSOLE	E-MD-7407125-0-0			
	SUPPORT, GLASS	D-IA-7407103-0-0			
30	SWITCH BOARD ASSY	D-IA-7006009-0-0			
	LOGIC DECALS	A-DC-7407193-0-0			
31	SWITCH BOARD (CONSOLE)	D-AD-5408112-0-0			
	SWITCH BOARD (CONSOLE) (PL)	A-PL-5408112-0-0			
	SPACER BAR, SWITCH BOARD	C-MD-7406823-0-0			
	(LIME PEEL) ROCKER SWITCH RS-9-3-FB-PC	C-AD-5404413-11-0			
	(CHARTREUSE)ROCKER SWITCH RS-9-3-FB-PC	C-AD-5404413-12-0			
	(LIME PEEL)ROCKER SW RS-5-0-FB-PC	C-AD-5404331-11-0			
	(CHARTREUSE)ROCKER SW RS-5-0-FB-PC	C-AD-5404331-12-0			
32	ETCH BOARD, SWITCH	D-IA-5008111-0-0			
	ASSY/DRILLING HOLE LAYOUT	C-AH-5408112-0-5			
	PRINTED CIRCUIT LAYOUT	PC5008111-0-0			
33	INDICATOR PANEL	D-IA-7406815-0-0			
	IND PNL SILK SCREEN STEP#1	C-SS-7406815-0-1			
	IND PNL SILK SCREEN STEP#2	C-SS-7406815-0-2			
	IND PNL SILK SCREEN STEP#3	C-SS-7406815-0-3			
	IND PNL SILK SCREEN STEP#4	C-SS-7406815-0-4			
	IND PNL SILK SCREEN STEP#5	C-SS-7406815-0-5			

FIND NO	DESCRIPTION	DWG NUMBER	DEPT USAGE PROD	CUST	F/C
34	LIGHT BOARD ASSY	D-AD-7006008-0-0			
	LIGHT BOARD ASSY (PL)	A-PL-7006008-0-0			
	LOGIC DECALS	A-DC-7407193-0-0			
35	LIGHT BOARD (CONSOLE)	D-IA-5408114-0-0			
36	ETCH BOARD, LIGHT (CONSOLE)	E-IA-5008113-0-0			
	ASSY DRILLING HOLE LAYOUT	C-AH-5408114-0-0			
	PRINTED CIRCUIT LAYOUT	PC-5008113-0-0			
37	TABLE ASSY	E-AD-7005958-0-0			
	TABLE ASSY (PL)	A-PL-7005158-0-0			
	TOP, TABLE	D-IA-7406836-0-0			
	FRAME, TABLE	E-IA-7406839-0-0			
38	FAN HOUSING ASSY	D-AD-7005983-0-0			
	FAN HOUSING ASSY (PL)	A-PL-7005983-0-0			
	CHASSIS, FAN HOUSING	E-IA-7407254-0-0			
	TERMINAL STRIP	C-IA-7405083-0-0			
	COVER, FAN HOUSING	D-MD-7406948-0-0			
	FAN DECALS	A-DC-7406899-0-0			
39	H951-TB NARROW DOOR	D-UA-H951-TB-0			
	H951-TB NARROW DOOR (PL)	A-PL-H951-TB-0			
	H951 DRAWING INDEX LIST	D-DI-H951-0-1			
40	H950-HB SHORT DOOR ASSY	D-UA-H950-HB-0			
	H950-HB SHORT DOOR ASSY (PL)	A-PL-H950-HB-0			
	H950 DRAWING INDEX LIST	D-DI-H950-0-1			
41	H951-BA- FULL LENGTH DOOR 30"	D-UA- H951-BA-0			
	H951-BA-FULL LENGTH DOOR 30" (PL)	A-PL-H951-BA-0			
	H951 DRAWING IND X LIST	D-DI-H951-0-1			
42	H952-A END PANEL	D-UA-H952-A-0			
	H952-A END PANEL (PL)	A-PL-H952-A-0			
	H952 DRAWING INDEX LIST	D-DI-H952-0-1			
43	H950-Q COVER PANEL (PL)	D-UA-H950-Q-0			
	H950-Q COVER PANEL (PL)	A-PL-H950-Q-0			
	H950 DRAWING INDEX LIST	D-DI-H950-0-1			
44	POWER SUPPLY 724	D-UA-724-0-0			
	POWER SUPPLY 724 (PL)	A-PL-724-0-0			
	724 POWER SUPPLY DECALS	B-DC-5308247-0-0			
	WIRE HARNESS 724 P.S.	E-IA-7006244-0-0			
	SCREEN,COVER	D-IA-5308206-0-0			
	CHASSIS, P.S.	E-IA-5308197-0-0			
	PLATE COVER TRANSFORMER	C-MD-5304562-0-0			
	COVER	B-MD-5304563-0-0			
	BRACKET HOLD DOWN	C-MD-5304561-0-0			
	CAUTION CHECK LABEL	A-DC-5308410-0-0			
	SPECS. 724 P.S.	A-SP-724-0-4			
45	UPPER MTG PANEL ASSY	D-AD-5408232-0-0			
	UPPER MTG PANEL ASSY (PL)	A-PL-5408232-0-0			
	UPPER MTG PANEL	E-IA-5308205-0-0			
46	HEAT SINK ASSY	D-AD-5408298-0-0			
	HEAT SINK ASSY (PL)	A-PL-5408298-0-0			
	INSULATOR, HEAT SINK	B-MD-5308300-0-0			
	HEAT SINK	C-SC-1209474-0-0			
47	CONN ASSY HEAT SINK	C-IA-5408291-0-0			
48	ETCH BOARD, HEAT SINK	C-IA-5008293-0-0			
	ASSY/DRILLING HOLE LAYOUT	C-AH-5408293-0-5			
	X-Y COORDINATE HOLE LOC	K-CO-5008294-0-4			

FIND NO	DESCRIPTION	DWG NUMBER	DEPT USAGE PROD	CUST	F/C
49	CONN, FILTER CAP	C-IA-5408292-0-0			
50	ETCH BOARD, FILTER CAP	C-IA-5008294-0-0			
	ASSY DRILLING HOLE LAYOUT	C-AH-5408292-0-5			
	X-Y COORDINATE HOLE LAYOUT	K-CO-5008294-0-4			
51	CABLE LOGIC POWER	D-IA-7006186-0-0			
52	POWER CONN G780	C-UA-G780-0-0			
	TAB FASTON	A-MD-7407196-0-0			
	INTERLOCK, POWER CONN	B-MD-7406958-0-0			
	ETCH BOARD	D-IA-5008253-0-0			
53	ANALOG PANEL ASSY	D-AD-7005964-0-0			
	ANALOG PANEL ASSY (PL)	A-PL-7005964-0-0			
	INSULATOR MICROSWITCH	B-MD-7407049-0-0			
	SWITCH ROTARY	B-MD-7407195-0-0			
	LOGIC DECAL	A-DC-7407193-0-0			
	G783 CABLE ASSY	C-IA-7006029-1-0			
54	ANALOG PANEL	D-IA-7406845-0-0			
	ANALOG PANEL SILK SCREEN	C-SS-7406845-0-1			
55	BASIC 4K MEMORY (EM12)	A-ML-EM12-0			
56	LOGIC ASSY MEMORY(EM12)	D-AD-7005979-0-0			
	LOGIC ASSY MEMORY (PL)	A-PL-7005979-0-0			
	298 PIN CONN BLOCK	E-SC-1205348-0-0			
	LOGIC FRAME DECALS	A-DC-7406370-0-0			
	LOGIC FRAME	D-IA-7407207-0-0			
57	MTG BAR ASSY	D-IA-7406100-0-0			
	MTG BAR	C-MD-7405035-0-0			
63	KW12 CONTROL PANEL	D-AD-7006335-0-0			
80	COLOR SCOPE CONTROL (VC12-C)	A-ML-VC12-C-0			
81	CRT DISPLAY (COLOR)	D-UA-VR20-0-0			
	CRT DISPLAY (COLOR)	A-PL-VR20-0-0			
	DRAWING INDEX LIST	D-DI-VR20-0-1			

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

FIRST USED ON OPTION/MODEL: PDP12

DO NOT SCALE DRAWING
UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINAL SURFACE QUALITY √
REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL

FINISH

		DATE
DRN.	J F Conroy	6/11/69
CHK'D.	Richard	7/15/69
ENG.	Gale	8/11/69
PROJ. ENG.	Gale	8/11/69
PROD.	Walt C	8/11/69

NEXT HIGHER ASSY

SCALE NONE

SHEET 4 OF 5

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: DRAWING INDEX LIST (PDP12)

SIZE	CODE	NUMBER	REV
D	DI	PDP12-0-1	Y

DIST. G

REVISIONS | REV. | CHANGE NO. | CHK

DEC FORM NO. DRD 100

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MECHANICAL			DEPT USAGE		
FIND NO	DESCRIPTION	PART NO.	PROD	CUST	F/C
59	PDP12 PROCESSOR (EPI2)	A-ML-EPI2-0			
60	LOGIC ASSEMBLY (EPI2) LOGIC ASSEMBLY (PL) 288 PIN CONN BLOCK LOGIC FRAME DECALS LOGIC FRAME	D-AD-7005976-0-0 A-PL-7005976-0-0 E-SC-1205348-1-0 A-DC-7406273-0-0 D-1A-7407207-0-0			
*62	REAL TIME CLOCK (KW12)	A-ML-KW12-0			
63	CLOCK CONTROL PANEL(KW12) CLOCK CONTROL PANEL SWITCH, ROTARY CLOCK CONTROL PANEL CLOCK CONTROL PANEL SCREEN	D-AD-7006335-0-0 A-PL-7006335-0-0 B-MD-7407540-0-0 D-1A-7407414-0-0 D-SS-7407414-0-1			

ELECTRICAL			DEPT USAGE		
FIND NO	DESCRIPTION	PART NO.	PROD	CUST	F/C
1	PDP 12 PDP12 CONFIGURATION POWER WIRING ~~SHIPPING & INSTALLATION SPEC~~ ACCEPTANCE SPEC SYSTEM SPEC HARDWARE KIT SPARE PARTS SOFTWARE KIT MANUAL TIMING FUNCTION PT1 MANUAL TIMING FUNCTION PT2 LINC FETCH 1A LINC FETCH 1B LINC FETCH 2 LINC DEFER LINC EXECUTE LINC EXECUTE LINC EXECUTE LINC EXECUTE EXECUTE 2 & INTERRUPT PDP-8 MODE FETCH PDP-8 MODE DEFER & EXECUTE BREAK	A-ML-PDP12-0 D-AR-PDP12-0-2 D-IC-PDP12-0-3 ~~A-SP-PDP12-8-4~~ A-SP-PDP12-0-5 A-SP-PDP12-0-6 A-AL-PDP12-0-7 A-SP-PDP12-0-8 A-SL-PDP12-0-9 D-FD-PDP12-0-10 D-FD-PDP12-0-11 D-FD-PDP12-0-12 D-FD-PDP12-0-13 D-FD-PDP12-0-14 D-FD-PDP12-0-15 D-FD-PDP12-0-16 D-FD-PDP12-0-17 D-FD-PDP12-0-18 D-FD-PDP12-0-19 D-FD-PDP12-0-20 D-FD-PDP12-0-21 D-FD-PDP12-0-22 D-FD-PDP12-0-23			
2	A-D CONVERTER A-D CONVERTER YADA CHAN 10-17 YADB CHAN 20-37 YADC A-D CONTROL	A-ML-AD12-0 D-BS-AD12-0-YAD D-BS-AD12-0-YADA D-BS-AD12-0-YADB D-BS-AD12-0-YADC			
*3	EXPANDED A-D	A-ML-AM12-0			
4	ADDITIONAL PREAMPS	A-ML-AG12-Ø			
4	KNOB/PREAMPS	A-ML-AG12-A			
6	RELAY BUFFER	A-ML-DR12-0			
7	RELAY PANEL ASSY CIRCUIT SCHEMATIC	D-AD-7005963-0-0 C-CS-7005963-0-1			
9	ETCH BOARD ASSY CIRCUIT SCHEMATIC	C-1A-5408124-0-0 C-CS-5408124-0-1			
12	LINC SCOPE CONTROL LINC-8 SCOPE DISPLAY DIS INTENSITY REGULATOR DSC DISPLAY CONTROL DSX HORIZONTAL D-A DSY VERTICAL D-A DISPLAY INT REG	A-ML-VC12-0 D-FD-VC12-0-4 D-BS-VC12-0-DIS D-BS-VC12-0-DSC D-BS-VC12-0-DSX D-BS-VC12-0-DSY D-BS-VC12-0-DSI			
13	CRT DISPLAY CIRCUIT SCHEMATIC	A-ML-VR14-0 D-CS-VR14-0-1			
17	LINC TAPE CONTROL TAPE PROCESSOR MJR. ST. FLOW TAPE INST SETUP TIMING SEARCH TIMING BLOCK MODE READING BLOCK MODE WRITE BLOCK MODE CHECKING MARK TIMING INTERPROCESSOR SIGNALS TAPE CONTROL STATES TAPE EXTENDED OPERATIONS TAPE EXTENDED FIELDS TAPE GROUP COUNTER TAPE INSTRUCTION TAPE UNIT AND MOTION TAPE REG ENABLE CONTROL TAPE REG LOAD CONTROL TRANSPORT CONTROL TAPE DELAYS TAPE MAINT TAPE MAINT REG TAPE READERS-WRITERS LTRA BITS 0 & 1 LTRB BITS 2 & 3 LTRC BITS 4 & 5 LTRD BITS 6 & 7 LTRE BITS 8 & 9 LTRF BITS 10 & 11 TAPE STATES TAPE TIME PULSES TAPE MARK WINDOW	A-ML-TC12-0 D-FD-TC12-0-10 D-FD-TC12-0-11 D-FD-TC12-0-12 D-FD-TC12-0-13 D-FD-TC12-0-14 D-FD-TC12-0-15 D-FD-TC12-0-16 D-BS-TC12-0-LIP D-BS-TC12-0-LCS D-BS-TC12-0-LCX D-BS-TC12-0-LCXF D-BS-TC12-0-LGP D-BS-TC12-0-LIN D-BS-TC12-0-LWU D-BS-TC12-0-LRE D-BS-TC12-0-LRL D-BS-TC12-0-LTC D-BS-TC12-0-LTD D-BS-TC12-0-LTM D-BS-TC12-0-LTMR D-BS-TC12-0-LTR D-BS-TC12-0-LTRA D-BS-TC12-0-LTRB D-BS-TC12-0-LTRC D-BS-TC12-0-LTRD D-BS-TC12-0-LTRE D-BS-TC12-0-LTRF D-BS-TC12-0-LTS D-BS-TC12-0-LTT D-BS-TC12-0-LWN			

ELECTRICAL			DEPT USAGE		
FIND NO	DESCRIPTION	PART NO	PROD	CUST	F/C
18	TAPE UNIT TU56 ~~TAPE UNIT 50 HZ~~	A-ML-TU56-Ø ~~A-ML-TU56-1~~			
*19	READ & WRITE OPTION	A-ML-TC12-F			
31	SWITCH BOARD ASSY CIRCUIT SCHEMATIC	D-AD-5408112-0-0 D-CS-5408112-0-1			
35	LIGHT BOARD ASSY CIRCUIT SCHEMATIC	D-1A-5408114-0-0 D-CS-5408114-0-1			
38	FAN HOUSING ASSY	D-AD-7005983-0-0			
44	724 POWER SUPPLY CIRCUIT SCHEMATIC	D-UA-724-0-0 D-CS-724-0-1			
52	POWER CONN G780 CIRCUIT SCHEMATIC	C-UA-G780-0-0 B-CS-G780-0-1			
53	ANALOG PANEL ASSY CIRCUIT SCHEMATIC	D-AD-7005964-0-0 C-CS-7005964-0-1			
55	BASIC 4K MEMORY	A-ML-EM12-0			
	MODULE UTILIZATION RACK A-D MODULE UTILIZATION (PL) MODULE UTILIZATION RACK E-F MODULE UTILIZATION (PL) WIRE LIST POWER WIRE LIST MCS SENSE AMPS & INHIBIT DRIVERS X-AXIS SELECTION Y-AXIS SELECTION MEMORY CONTROL INTER PROC CABLES	D-MU-EM12-0-1 A-PL-EM12-0-1 D-MU-EM12-0-2 A-PL-EM12-0-2 K-WL-EM12-0-3 A-WL-EM12-0-4 D-BS-EM12-0-MCS D-BS-EM12-0-MCX D-BS-EM12-0-MCY D-BS-EM12-0-MCT D-BS-EM12-0-IPCM			
56	WIRED ASSY (EM12) WIRED ASSY PL	D-AD-7005979-0-0 A-PL-7005979-0-0			
59	PDP12 PROCESSOR MODULE UTILIZATION RACK ~~H-I~~ MODULE UTILIZATION (PL) ~~MODULE UTILIZATION RACK H-N~~ ~~MODULE UTILIZATION (PL)~~	A-ML-EP12-0 D-MU-EP12-0-1 A-PL-EP12-0-1 ~~D-MU-EP12-0-2~~ ~~A-PL-EP12-0-2~~			
	CONSOLE STARTS CONSOLE INDICATORS CENTRAL PROCESSOR RUN CENTRAL PROCESSOR STATES CP TIME STATES CENTRAL PROCESSOR TIME PULSES CONSOLE SWITCH INPUTS CARRY INSERTS FLOW & END SHIFT LINK LOGIC IO & EXT MEM CABLES INSTRUCTION REGISTER INSTRUCTIONS INPUT TO PART A I/O INPUT TO PART B I/O IO CONTROL & TIMING IO OUTPUT BUFFERS RELAY BUFFER INTER PROC CABLES MEM EXTN AC INPUTS MEM PAGE EXTN CONTROLS PROCESSOR MISC A PROCESSOR MISC B PRA PROCESSOR BITS 0 & 1 PRB PROCESSOR BITS 2 & 3 PRC PROCESSOR BITS 4 & 5 PRD PROCESSOR BITS 6 & 7 PRE PROCESSOR BITS 8 & 9 PRF PROCESSOR BITS 10 & 11 REGISTER CONTROL A REG IN ENABLE 2 REGISTER CONTROL C REG ENABLE 4 REG SHIFT & MQ INPUTS PROCESSOR REGISTER LOAD CONTROL SKIP FF & H BITS EP12 BITS MULQUOTIENT PROCESSOR REGISTOR GATING	D-BS-EP12-0-CST D-BS-EP12-0-CIN D-BS-EP12-0-CPR D-BS-EP12-0-CPS D-BS-EP12-0-CPT D-BS-EP12-0-CPTP D-BS-EP12-0-CSI D-BS-EP12-0-CYI D-BS-EP12-0-FLE D-BS-EP12-0-FLK D-BS-EP12-0-IOB D-BS-EP12-0-INR D-BS-EP12-0-INS D-BS-EP12-0-IOA D-BS-EP12-0-IOB D-BS-EP12-0-IOC D-BS-EP12-0-IOO D-BS-EP12-0-IOR D-BS-EP12-0-IPC D-BS-EP12-0-MEA D-BS-EP12-0-MPG D-BS-EP12-0-PWA D-BS-EP12-0-PMB D-BS-EP12-0-PRA D-BS-EP12-0-PRB D-BS-EP12-0-PRC D-BS-EP12-0-PRD D-BS-EP12-0-PRE D-BS-EP12-0-PRF D-BS-EP12-0-RCA D-BS-EP12-0-RCB D-BS-EP12-0-RCC D-BS-EP12-0-RCD D-BS-EP12-0-RCS D-BS-EP12-0-RCL D-BS-EP12-0-SKH D-BS-EP12-0-SKL D-BS-EP12-Ø-MQR D-BS-EP12-0-PRG			

ELECTRICAL			DEPT USAGE		
FIND NO	DESCRIPTION	PART NO.	PROD	CUST	F/C
59 (CONT)	SET/RESTORE FIELDS SPECIAL LEVELS 1 TTI TELETYPE RECEIVER TTO TELETYPE TRANSMITTER WIRE LIST D.C. POWER PROCESSOR LOGIC	D-BS-EPI2-0-SRF D-BS-EPI2-0-SLA D-BS-EPI2-0-TTI D-BS-EPI2-0-TTO K-WL-EPI2-0-3 A-WL-EPI2-0-4			
60	WIRED ASSY(EPI2)	D-AD-7005976-0-0			
61	WIRED ASSY(PL) PLOTTER CONTROL (XY12)	A-PL-7005976-0-0 A-ML-XY12-0			
62*	CLOCK (KW12-A)	A-ML-KW12-Ø			
*63	CLOCK CONTROL CIRCUIT SCHEMATIC	D-CS-7006335-0-1			
*65	EXT MEMORY CONTROL (MC12)	A-ML-MC12-0			
*66	ADDITIONAL 4K MEMORY (MM8I-A)	A-ML-MM8I-A-0			
*67	ARITHMETIC OPERATION (KE12)	A-ML-KE12-0			
*68	PWR FAIL RESTART (KP12)	A-ML-KP12-0			
*69	TTY DATAPHONE (DP12-A)	A-ML-DP12-A			
*70	TTY DATAPHONE (DP12-B)	A-ML-DP12-B			
*71	TIME SHARING (KT12)	A-ML-KT12-0			
73	CLOCK (KW12-B)	A-ML-KW12-Ø			
74	CLOCK (KW12-C)	A-ML-KW12-Ø			
*75	AUTOMATIC PRIORITY INTERRUPT	A-ML-KF12-0			
*76	DATA BREAK MULTIPLEXER	A-ML-DM12-0			
*77	FLOATING POINT PROCESSOR	A-ML-FPP12-0			
*78	I/O ACCESS PANEL H309	A-ML-H309-0			
*79	ANALYTICAL INSTRUMENTATION - PACKAGE	A-ML-AIP12-0			
80	COLOR DISPLAY CONTROL	A-ML-VC12-C-			
81	COLOR DISPLAY	A-ML-VR20-0			
82	611/601 SCOPE CONTROL	A-ML-VC12-S			

REVISIONS

REV	CHANGE NO.	CHK

FIRST USED ON OPTION MODEL: PDP12

QTY.	DESCRIPTION	PART NO.	ITEM NO.
	PARTS LIST		

UNLESS OTHERWISE SPECIFIED

UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINAL SURFACE QUALITY
REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL

FINISH

DRN.	J. Fleming	DATE 1-13-69
CHK'D.	[illegible]	DATE 2/24/69
ENG.	L. Gale	DATE 3/11/69
PROJ. ENG.	L. Gale	DATE 3/11/69
PROD.	[illegible]	DATE 3/18/69

NEXT HIGHER ASSY.

SCALE NONE

SHEET 5 OF 8

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: DRAWING INDEX LIST (PDP 12)

SIZE D | CODE D1 | NUMBER PDP12-Ø-1 | REV Y

DIST. G

DEC FORM NO. DRD 100

SIZE D | CODE D1 | NUMBER PDP12-Ø-1 | REV Y

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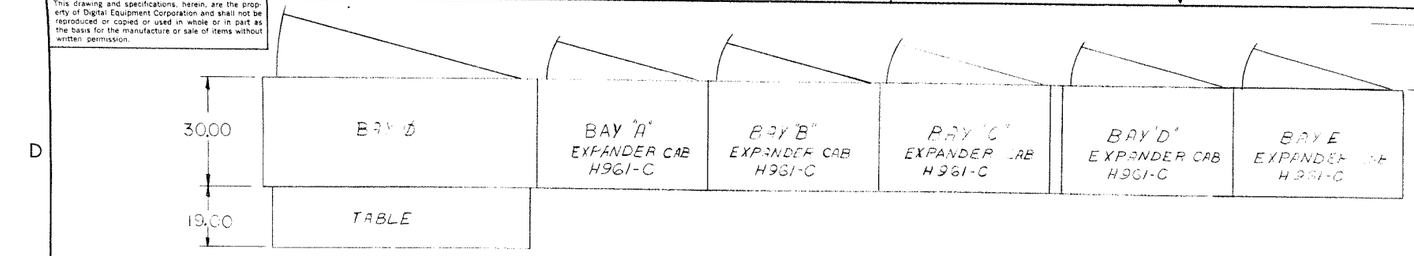
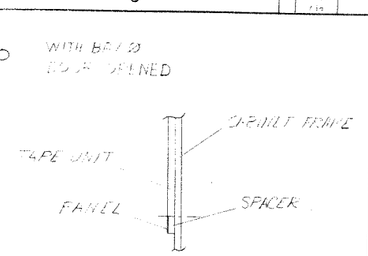
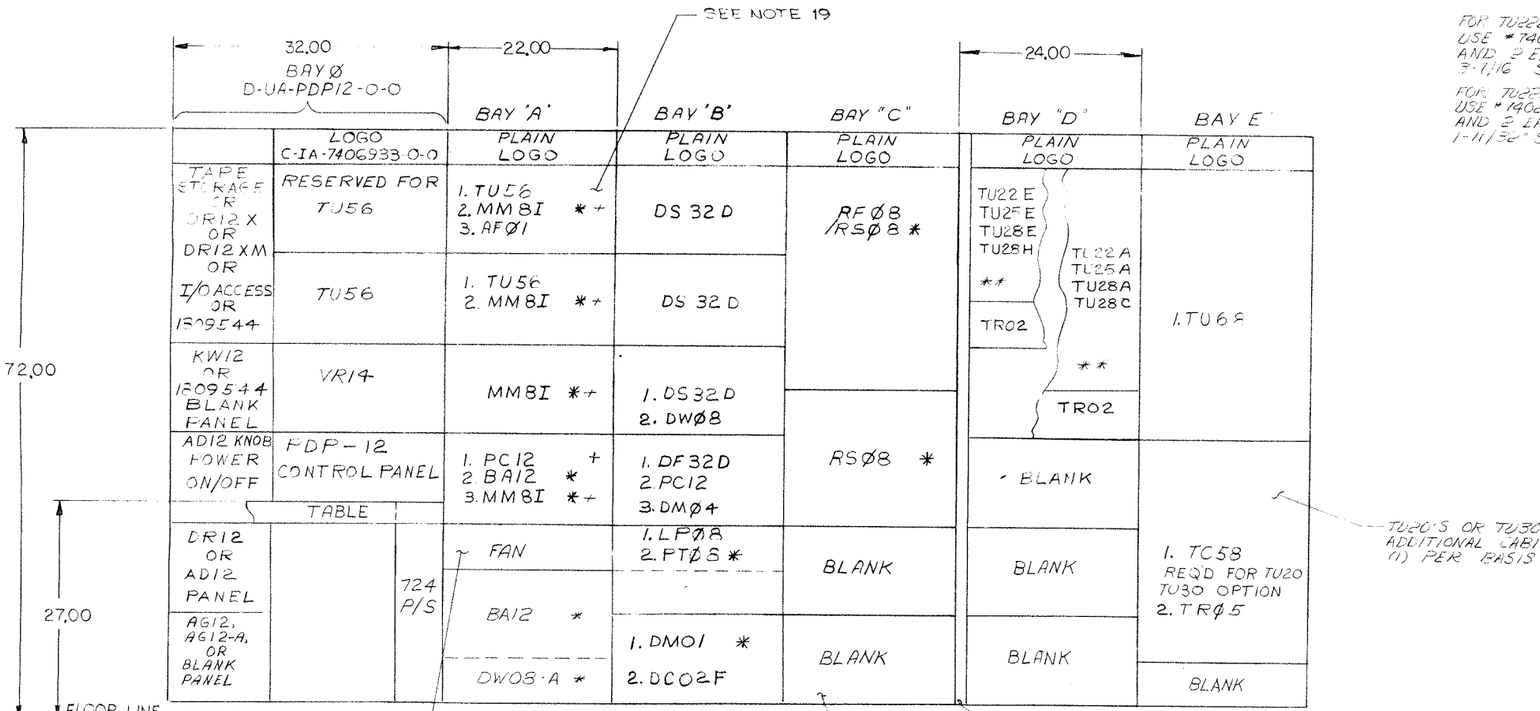




DETAIL A

FOR TU22E TU25E TU28E OR TU28H USE * 7402015 3-7/16" PANEL AND 2 EACH * 7406676-2-0 3-7/16" STANDOFF (SPACER)

FOR TU22A TU25A TU28A OR TU28C USE * 7402025 1-11/32" PANEL AND 2 EACH * 7406676-1-0 1-11/32" STANDOFF (SPACER)



TU20'S OR TU30'S REQUIRE ADDITIONAL CABINETS ON A (1) PER BASIS

FRONT VIEW

SEE NOTE 19

FILLER STRIP (C-MD-7407470-0-0) REQ'D WHEN USING TU22/25/28/58/68 OPTIONS.

SEE NOTE #3

NOTES:

COVER PANELS AND DOORS

1. IF OPTION IS NOT REQUIRED IN PRIORITY AREA OR BLANK IS LISTED FOR CAB 'A' THRU 'D' USE PANEL H950-QA
2. * ASTERISK DESIGNATES OPTIONS THAT REQUIRE H950-QA COVER PANEL
3. A MAXIMUM OF (2) RS08 OPTIONS AND (1) RF08 OPTION CAN BE USED PER CABINET
4. TC58 OR DF/DS 32 OPTIONS IN ANY EXPANDER BAY REQUIRE "7006855-0-0 DOOR

CABLING AND OPTION PLACEMENT CONSIDERATIONS

5. I/O CABLES TO MM8I OPTION TO BE KEPT AS SHORT AS POSSIBLE
6. I/O CABLES SHOULD NOT CROSS OVER EACH OTHER. FOR CABLE LENGTHS AVAILABLE AND PREFERRED ROUTING SEE SHEET #3 DETAIL 'A'
7. PC12 OPTION SHOULD ALWAYS BE IMMEDIATELY ABOVE BA12 OPTION, ALSO CONVENIENT FOR THE OPERATOR.
8. DS32 SHOULD ALWAYS BE ABOVE DF32
9. TU56'S SHOULD ALWAYS BE MTD NEAR TOP OF OPTION BAYS FOR OPERATOR'S CONVENIENCE
10. SHOULD A CONFLICT OCCUR FOR A GIVEN OPTION LOCATION RELOCATE LOWER PRIORITY OPTION DIRECTLY ACROSS IN BAY 'B'

PWR CONTROL AND POWER SUPPLY PLACEMENT AND REQUIREMENT CONSIDERATIONS

11. PWR SUPPLIES ALWAYS MOUNT ON THE REAR PLENUM DOOR BUT MUST NOT BE ADJACENT TO DF/DS32 DISC OPTIONS.
12. A 734B VARIABLE PWR SUPPLY IS REQUIRED TO MARGIN THE DF/DS32 DISC OPTION.
13. A 783 P/S MUST BE DEDICATED TO THE DS/DF32 DISC SECTION.
14. ONE OR MORE 783 P/S WILL BE USED TO HANDLE OTHER OPTIONS IN BAY 'A'
15. AN 854 PWR CONTROL SEPARATE 20 AMP SERVICE (ON SAME PHASE AS COMPUTER) IS USED FOR THE FIRST OPTION CAB AND WILL HANDLE AS WELL OTHER BAYS
16. THE RS/RF08 AND MAG TAPE CABS WHICH ARE COMPLETELY DEFINED IN OTHER PRINT SETS USE THEIR OWN POWER CONTROL AND WILL REQUIRE SEPARATE 20 AMP SERVICES.

OTHER CONSIDERATIONS

17. A FULL LENGTH DOOR MAY BE USED ON THE FRONT OF AN OPTION CABINET WHICH IS COMPLETELY FILLED WITH LOGIC AND WITHOUT OPERATOR CONTROLS.
18. ALWAYS USE COVER PANELS FOR OPTION CABINETS WHICH MAY HAVE LOGIC ADDED AT A LATER TIME.
19. USE 7006115-1 OR 7005530-1 FAN ASSEMBLY FOR OPTION DESIGNATED BY SYSTEM LAYOUT.
20. USE (1) 5-1/4" * 7005909 AC SERVICE RECEPTACLE ASSEMBLY FOR SYSTEMS HAVING MORE THAN 2 TTY'S.
21. ** DENOTES UNITS REQUIRING FILLER STRIPS. (SEE DETAIL A)
22. "GRAIN OF WHEAT" LAMPS, PME3-8793, SHOULD BE USED FOR BLOWN FUSE DETECTION ON ALL OPTION MODULES. THESE LAMPS SHOULD BE PLACED FROM #5 TO #9 SLOTS AT THE EITHER MOST RIGHT POINT OF MODULE AS VIEWED FROM THE FRONT.

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

REVISIONS			
CHK	CHANGE NO.	REV	
	12-00051	A	
FV	12-00060	B	
	12-00079	C	
FV	12-00088	D	
	12-00093	E	
		F	
		G	
		H	

FIRST USED ON OPTION/MODEL: PDP12

DO NOT SCALE DRAWING

UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINAL SURFACE QUALITY √
REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL

FINISH

NEXT HIGHER ASSY

		DATE
DRN.	R. Kimball	10-9-69
CHK'D.	R. Kimball	12-15-69
ENG.	D. Mackin	11-17-69
PROJ. ENG.	Jo G.	10-17-69
PROD.	W. Gale	10/17/69

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: EQUIPMENT LAYOUT (PDP12)

SIZE	CODE	NUMBER	REV.
D	AR	PDP12-0-2	H

SCALE

SHEET 1 OF 5

DIST.

SIZE CODE D AR NUMBER PDP12-0-2 REV H

DEC FORM NO. 1040 1/69

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BAY "E" | BAY "D" | BAY "C" | BAY "B" | BAY "A" | BAY "Ø"

BAY "E"	BAY "D"	BAY "C"	BAY "B"	BAY "A"	BAY "Ø"	
			PWR DIST PNL #7005909	PWR DIST PNL #7005909	BASIC 4K MEMORY EM12	FAN ASSY
					CENTRAL PROCESSOR EP12	FAN ASSY
				854 PWR CONT.		
			734B P/S VARIABLE FOR RF/RS Ø8	783 P/S		
783 P/S FOR TC58			783 P/S	783 P/S		

REAR VIEW

BAY Ø (D-UA-PDP12-0-0) BAY "A" (H-961-C CAB)

	LOGO	LOGO
TAPE STORAGE OR DR12X OR DR12XM OR I/O ACCESS OR 1809544	RESERVED FOR TU56	DS32D
	TU56	DS 32D
KW12 OR 1809544 BLANK PANEL	VR14	DS 32D
AD12 KNOBS POWER ON/OFF	PDP-12 CONTROL PANEL	DF 32D
	TABLE	
DR12 AND AD12 PANEL	724 P/S	DWØ8-A
		BLANK
AG12, AG12A OR BLANK PANEL		BLANK

FRONT VIEW

BAY "A" | BAY Ø

BAY "A"	BAY Ø	
PWR DIST #7005909	MEMORY EM12	FAN ASSY
	PROCESSOR EP12	FAN ASSY
854 PWR CONT		
783 P/S		

REAR VIEW

DISK CONFIGURATION

#700555-00 DOOR REQ'D.

BAY Ø (D-UA-PDP12-0-0) BAY "A" (H-961-C CAB)

	LOGO	LOGO
TAPE STORAGE OR DR12X OR DR12XM OR I/O ACCESS OR 1809544	BLANK	BLANK
	BLANK	AXØ8
KW12 OR 1809544 BLANK PANEL	BLANK	BLANK W/ COVER #950-PA
		RM5Ø3
AD12 KNOBS POWER ON/OFF	PDP-12 CONTROL PANEL	PC12
	TABLE	
DR12 OR AD12 PANEL	724 P/S	BA12 *
AG12, AG12A OR BLANK PANEL		DWØ8-A *
		BLANK

FRONT VIEW (LAB-8 CONFIGURATION)

(1) 783 P/S & 854 PWR CONT REQ'D ON BOTTOM OF REAR DOOR

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

FIRST USED ON OPTION/MODEL: PDP12

DO NOT SCALE DRAWING

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINAL SURFACE QUALITY
REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL

FINISH

NEXT HIGHER ASSY

		DATE
DRN.	D. Sisk	10-67
CHK'D.	A. Kotok	10-67
ENG.	J. G.	10/19/67
PROJ. ENG.	J. G.	10/19/67
PROD.	A. Cook	10/19/67

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

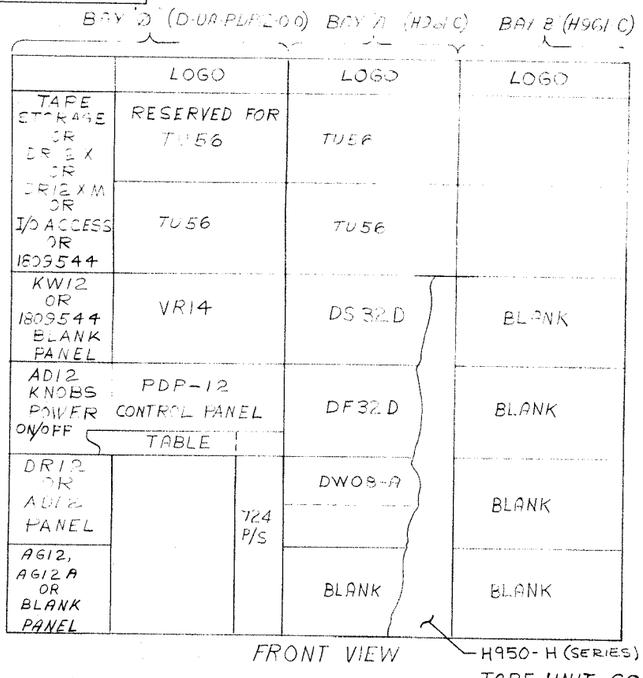
TITLE: EQUIPMENT LAYOUT PDP12

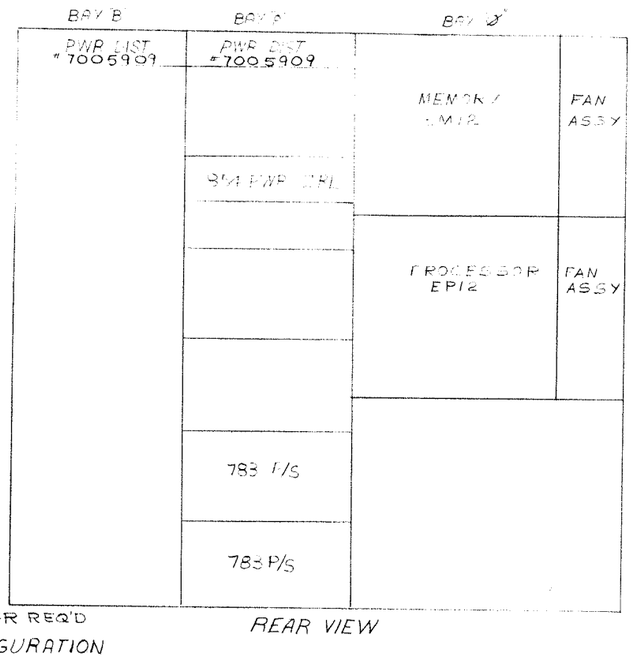
SIZE D | CODE AR | NUMBER PDP12-0-2 | REV. H

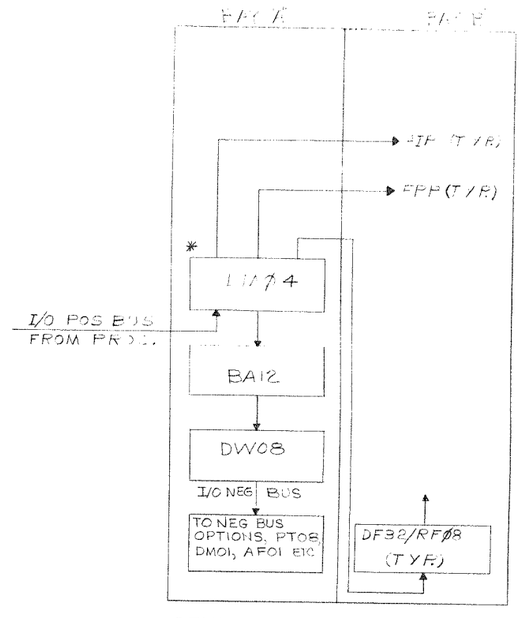
SCALE — | SHEET 2 OF 2 | DIST.

REVISIONS: REV | CHANGE NO. | CHK

DEC FORM NO. DRD 100

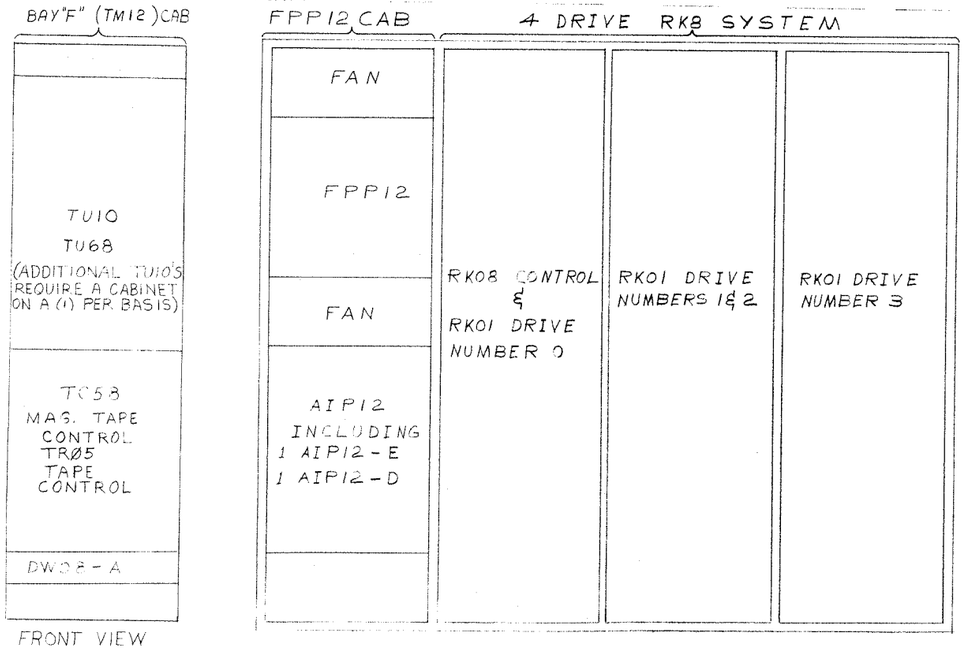






DETAIL-A

* DM04 MAY BE REPLACED BY DM12 IF INSTALLED.



QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

FIRST USED ON OPTION/MODEL: PDP12	DO NOT SCALE DRAWING	DRN.	DATE
	UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30' FINAL SURFACE QUALITY ✓ REMOVE BURRS AND BREAK SHARP CORNERS	CHK'D.	DATE
		ENG.	DATE
		PROJ. ENG.	DATE
		PROD.	DATE
	MATERIAL	NEXT HIGHER ASSY	
	FINISH	SCALE	SHEET 3 OF 5

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: EQUIPMENT LAYOUT PDP12

SIZE D | CODE AR | NUMBER PDP12-Ø-2 | REV. H | DIST.

REVISIONS: REV. | CHANGE NO. | CHK

DEC FORM NO. DRD. 100

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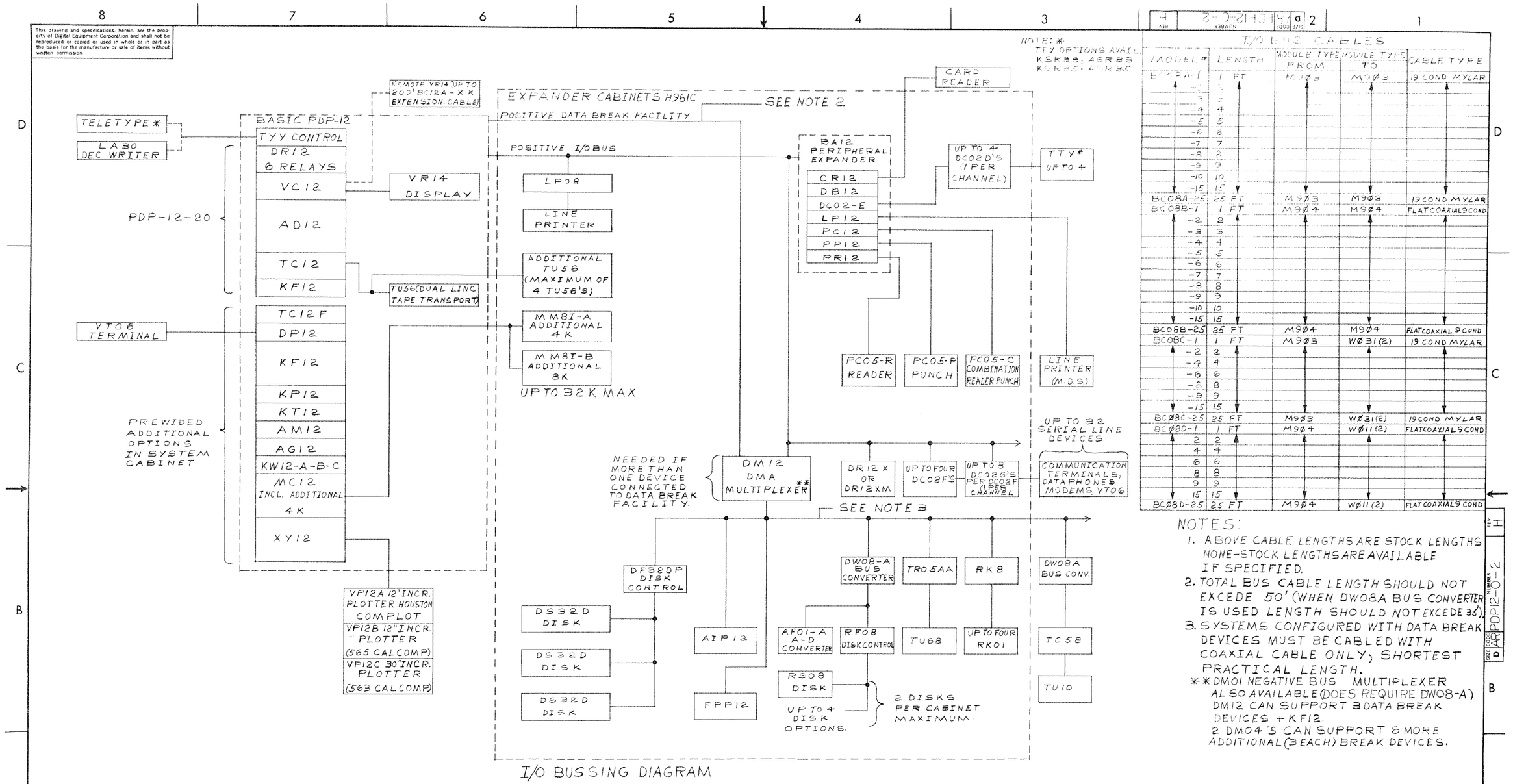

I/O BUSSING DIAGRAM

NOTE: * TTY OPTIONS AVAIL. KSR33, ASR33 KSR35, ASR35

I/O BUS CABLES

MODEL #	LENGTH	MODULE TYPE FROM	MODULE TYPE TO	CABLE TYPE
BC08A-1	1 FT	M9Ø3	M9Ø3	19 COND MYLAR
-2	2			
-3	3			
-4	4			
-5	5			
-6	6			
-7	7			
-8	8			
-9	9			
-10	10			
-15	15			
BC08A-25	25 FT	M9Ø3	M9Ø3	19 COND MYLAR
BC08B-1	1 FT	M9Ø4	M9Ø4	FLAT COAXIAL 9 COND
-2	2			
-3	3			
-4	4			
-5	5			
-6	6			
-7	7			
-8	8			
-9	9			
-10	10			
-15	15			
BC08B-25	25 FT	M9Ø4	M9Ø4	FLAT COAXIAL 9 COND
BC08C-1	1 FT	M9Ø3	WØ31(2)	19 COND MYLAR
-2	2			
-4	4			
-6	6			
-8	8			
-9	9			
-15	15			
BC08C-25	25 FT	M9Ø3	WØ31(2)	19 COND MYLAR
BC08D-1	1 FT	M9Ø4	WØ11(2)	FLAT COAXIAL 9 COND
2	2			
4	4			
6	6			
8	8			
9	9			
15	15			
BC08D-25	25 FT	M9Ø4	WØ11(2)	FLAT COAXIAL 9 COND

NOTES:

1. ABOVE CABLE LENGTHS ARE STOCK LENGTHS NONE-STOCK LENGTHS ARE AVAILABLE IF SPECIFIED.
2. TOTAL BUS CABLE LENGTH SHOULD NOT EXCEDE 50' (WHEN DW08A BUS CONVERTER IS USED LENGTH SHOULD NOT EXCEDE 35').
3. SYSTEMS CONFIGURED WITH DATA BREAK DEVICES MUST BE CABLED WITH COAXIAL CABLE ONLY; SHORTEST PRACTICAL LENGTH.

** DMOI NEGATIVE BUS MULTIPLEXER ALSO AVAILABLE (DOES REQUIRE DW08-A) DM12 CAN SUPPORT 3 DATA BREAK DEVICES + KF12. 2 DM04'S CAN SUPPORT 6 MORE ADDITIONAL (3 EACH) BREAK DEVICES.

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP12	PARTS LIST			

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES
DECIMALS .XXX = .005 .XX = .02 X = 1 ANGLES ±0° 30'
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓
MATERIAL —
FINISH —

DRN. G GIANOULIS	DATE 10-10-65	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
CHK'D. K-RUSS	DATE 10-15-65	
ENG. L-GALE	DATE 10-17-65	
PROJ. ENG. L-GALE	DATE 10-17-65	
PROD. D-GALL	DATE 10-17-65	
NEXT HIGHER ASSY.		
SCALE —		
SHEET 4 OF 5		

TITLE: EQUIPMENT LAYCUT (PDP12)

SIZE D | CODE AR | NUMBER PDP12-0-2 | REV. H | DIST. G

REVISIONS: REV | CHANGE NO | CHK

DEC FORM NO DRD 102-B

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PDP12

OPTION CABS H-961-C

A B C D

P/S

FRONT VIEW

OPTION CABS

D C B A

PDP12

MEMORY

FAN ASSY

A P/S

PROCESSOR

FAN ASSY

P/S

REAR VIEW

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

FIRST USED ON OPTION/MODEL
PDP12

DO NOT SCALE DRAWING

UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINAL SURFACE QUALITY √
REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL

FINISH

DRN.	R. RIFFIN	DATE 10-16-69
CHK'D	F. KU	DATE 10-25-69
ENG.	L. DALE	DATE 10-25-69
PROJ. ENG.	L. DALE	DATE 10-27-69
PROD.	L. DALE	DATE 10-27-69

NEXT HIGHER ASSY

SCALE

SHEET OF

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
EQUIPMENT LAYOUT PDP12

SIZE	CODE	NUMBER	REV.
D	AR	PDP12-0-2	H

DIST.

SIZE D CODE AR NUMBER PDP12-0-2 REV H

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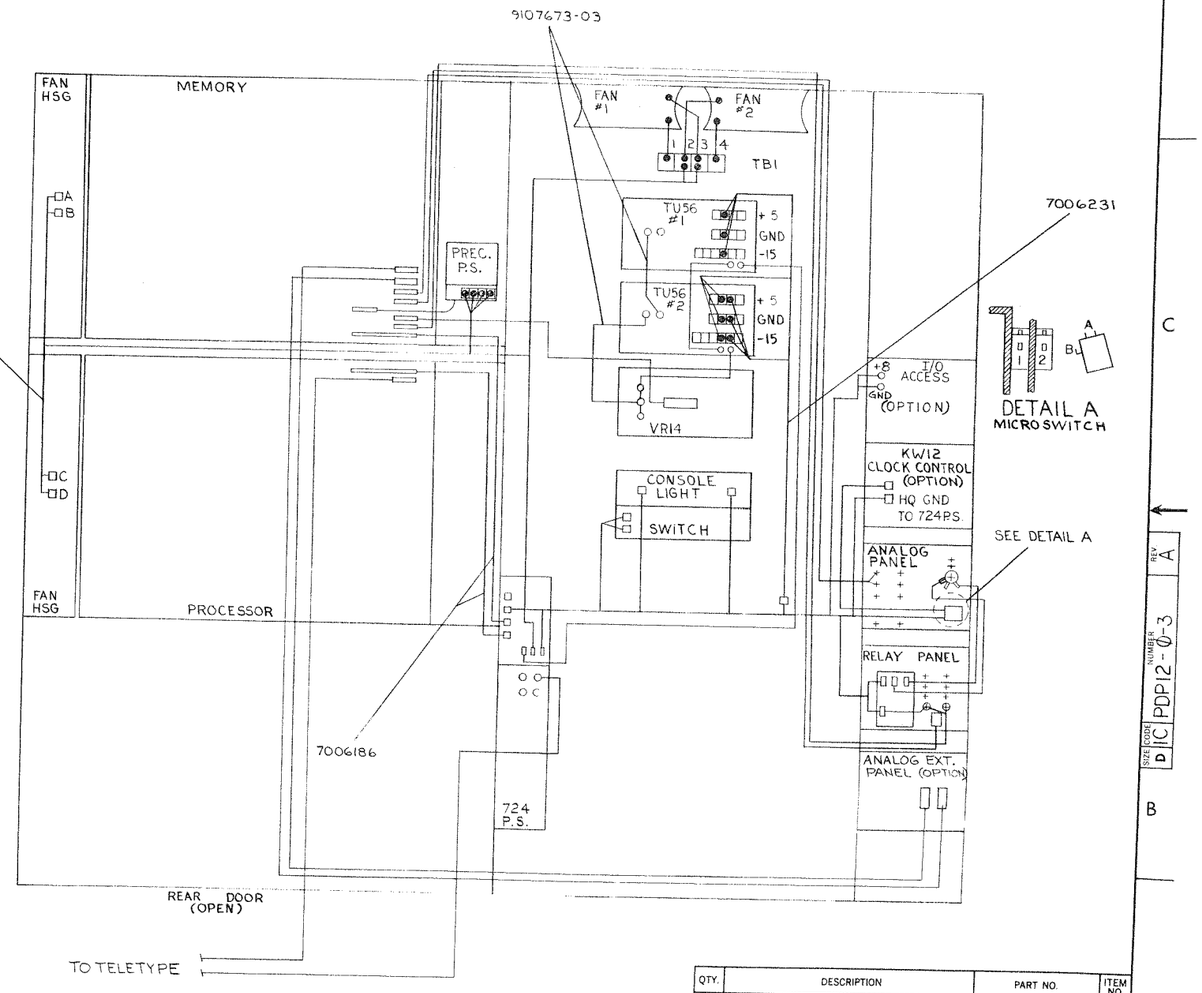
POWER WIRING & CABLES

PART NO.	COLOR	FROM/HARNESS LEAD NO.	TO SYS. LOC.	REMARKS
7006038	---	P1	724 P S CONSOLE CONN	POWER CABLE D.C.
	---	P2	724 P S CONSOLE SWITCH	
	BLU	8	SW BD-15V TAB	
	BLU	9	SW BD-15V PANEL ID	
	BLK	10	LIGHT BD GND TAB	
	BLK	11	" " GND TAB	
	ORN	12	" " +15V TAB	
	ORN	13	" " +15V TAB	
	ORN	14	RELAY BD +15V TAB	
	BLK	15	RELAY BD GND TAB	
	WHT	16	MICRO SW. 2B(COM)	
	RED	17	" " 2A(N.O.)	
	BLU	19	" " 1A(N.O.)	
	BLU	19	" " 1B(COM)	
7006038	---	P3	LINC TAPE D.C.	POWER CABLE D.C.
			CABLE 7006231-P1	
7006231		P1	PWR CABLE D.C.	LINC TAPE D.C.
			7006038-P3	
	BLK	1	TU56 (2) GND	
	RED	2	" +5	
	BLU	3	" -15	
	RED	7	" (1) +5	
	BLU	8	" -15	
	BLK	9	" GND	
	BLU	10	(2) -15	
	RED	11	" +5	
7006231	BLK	12	" GND	LINC TAPE D.C.
7006037	---	P1	FAN HSG CONN B	MAIN FRAME 120 VAC
	---	P2	" " " A	
	---	P3	724 P'S 115 VAC AU.TA.	
	WHT	7	TB1 - 2	
	RED	8	TB1 - 3	
	WHT	9	PREC. P'S - WHT	
	RED	10	" " RED	
	WHT	11	" " WHT	
	RED	12	" " RED	
	---	P4	FAN HSG CONN D	
7006037	---	P5	" " " C	MAIN FRAME 120 VAC
7006186	---	724 P S MEMORY	LOGIC EF 40	LOGIC PWR CABLE
7006186	---	724 P S PROCESSOR	LOGIC MN 01	LOGIC PWR CABLE
REF	GRN	RELAY PANEL JAX	RELAY BD GND TAB	PANEL LEAD WIRE
REF	ORN	ANALOG PNL R10-1	RELAY BD SPKR #1	PANEL LEAD WIRE
REF	VIO	" R10-3	" " SPKR #3	PANEL LEAD WIRE
REF	---	PRECISION P'S	LOGIC E 35	LOGIC PWR CABLE
REF	BLK	FAN #1	TB1 - 1	
REF	BLK	FAN #1	TB1 - 3	
REF	BLK	FAN #2	TB1 - 2	
REF	BLK	FAN #2	TB1 - 4	
REF	---	TRIAD XMFR INPUT	724 P'S SERV. RECP.	240 VAC SYS. ONLY } SEE NOTE #1
1201265	---	TRIAD XMFR OUTPUT	TU55 (1) AC INPUT	240 VAC SYS. ONLY }
9107673-03	GRY	TU55 (1) AC OUTPUT	TU55 (2) AC INPUT	
9107673-03	GRY	TU55(2) AC OUTPUT	VR12 AC INPUT	
1201265	---	724 P'S SERV RECP	TU55(1) AC INPUT	115 VAC SYS. ONLY } SEE NOTE #1
REF	RED	KW12 CLOCK PNL	MICRO SW 2A (N.O.)	PANEL LEAD WIRE
REF		TELETYPE	724 PS SERV RECP	POWER CORD
REF	WHT	KW12 PNL	724 P.S.	HQ GND

SIGNAL CABLE CONNS.

PART	FROM	TO	REMARKS
7006238	VR12 AMP CONN	LOGIC F 38	INTERNAL SCOPE CABLE
ANALOG PNL	ANALOG PANEL CHAN 0-7	LOGIC F 33	
RELAY PNL	RELAY PNL CHAN 10-17	LOGIC F 32	
RELAY PNL	RELAY PNL SCP CBL	LOGIC F 39	
REF	TU55(#1) - AB02	TU55(#2) AB02	INFO CONN
REF	TU55(#1) AB03	LOGIC EF06	" "
REF	TU55(#1) A05	TU55(#2) A05	COMMAND CONN
REF	TU55(#1) A06	LOGIC E05	" "
CONSOLE	CONSOLE SWITCHES	LOGIC N 33	
		N 34	
	CONSOLE SWITCHES	N 35	
	CONSOLE LIGHT BD	N 36	
		N 29	
		N 30	
		N 31	
CONSOLE	CONSOLE LIGHT BD	LOGIC N 32	
RELAY PNL	RELAY BOARD	LOGIC N 28	
REF	TELETYPE	LOGIC N02	
ANALOG EXT	ANALOG EXT CHAN 20-27	LOGIC F 31	OPTION
ANALOG EXT	ANALOG EXT CHAN 30-37	LOGIC F 30	OPTION



REVISIONS	REV.
CHANGE NO. 12-00093 SCANLAN 5/14/71	A

QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST			

FIRST USED ON OPTION/MODEL: PDP12

DO NOT SCALE DRAWING

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINAL SURFACE QUALITY √
REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL

FINISH

DRN. A Kaufka	DATE 6/27/69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D.	DATE 7/8/69	
ENG. L. Gale	DATE 8/11/69	
PROJ. ENG. L. Gale	DATE 8/11/69	
PROD.	DATE	
NEXT HIGHER ASSY C-UA-PDP12-Ø-√		
SCALE NONE		
SHEET OF		

TITLE: POWER WIRING & SIGNAL CABLES

SIZE D | CODE IC | NUMBER PDP12-Ø-3 | REV A | DIST.

DEC FORM NO. DAD 1:00

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MANUAL TIME PULSE FUNCTIONS

MANUAL FUNCTION TIMING CHAIN
IS STARTED IF RUN = 0 "AND" ONE OF THESE KEYS
ARE DEPRESSED OR RUN = 1 "AND" INTERNAL PAUSE =
1 "AND" IN PROGRES = 1 "AND" KEY I/O PRESET

MFT Ø

IO PRESET: Ø → SKIP; Ø → STATES; Ø → H

FILL + EXAM: Ø → SKIP; Ø → STATES; Ø → H

FILL STEP: Ø → SKIP; Ø → STATES; Ø → H

STEP EXAM: Ø → SKIP; Ø → STATFS; Ø → H

START 2Ø: Ø → SKIP; Ø → STATES; Ø → H

START 4ØØ: Ø → SKIP; Ø → STATES; Ø → H

START LSW: Ø → SKIP; Ø → STATES; Ø → H

CONT

DO: Ø → SKIP; Ø → STATES; Ø → H

MFT 1

I/O PRESET PULSE
Ø → THE WORLD INCLUDING AC, LINK, FLOW, AUTO, ETC.

KEY LINC → SET LINC MODE
-KEY LINC → SET 8 MODE

1 → STEP EXAM FF

1 → A ENABLE

1 → AUTO FF IF AUTO SW ON

1 → FILL STEP

2Ø → PC

4ØØ → PC

LSW → PC
LSW Ø,1 → IB - IF Ø3,Ø4
IFSWØ-2 → IB, IFØ > 2

1 → A ENABLE
1 → AUTO FF
IF AUTO SW ON
1 → DO FF
Ø → EN MEM

MFT 2

1 → IBØ3, IFØ3
DFØ3, DFØ4

1 → RUN

1 → RUN

1 → RUN

1 → RUN

PC → MA

1 → RUN

WAIT FURTHER CONSOLE ACTIONS

T1 FLOW 11

T1 FLOW 11

T1 FLOW 11

LINC MODE

8 MODE

LINC MODE FETCH FLOW 12

8 MODE FETCH FLOW 21

T1 FLOW 11

LINC MODE { PC 2-11 → MA 2-11; IF 3-4 → MA Ø-1

8 MODE PC Ø-11 → MA Ø-11

REVISIONS				
CHK	CHANGE NO.	REV.		
[illegible]	EP12-00003	A	T. Quilty 5-30-69	GALE
[illegible]	EP12-00004	B	[illegible] 6/20/69	L. GALE
[illegible]	EP12-00006	C	[illegible] 7-23-69	GALE
[illegible]	EP12-00015	D	[illegible] 8-13-69	L. GALE
FV	12-00085	E	T. Quilty 9-23-70	GALE

UNLESS OTHERWISE SPECIFIED			
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES DECIMALS ± .005, FRACTIONS ± 1/64, ANGLES ± 0°30' FINAL SURFACE QUALITY ✓ REMOVE BURRS AND BREAK SHARP CORNERS	DRN	Joe Ayoub	DATE 9-24-68
	CHK'D	[illegible]	DATE 2/16/69
	ENG	[illegible]	DATE 2/17/69
MATERIAL	PROJ. ENG.	[illegible]	DATE 2/19/69
	PROD.	[illegible]	DATE [illegible]
FINISH	FIRST USED ON	PDP-12	
	SCALE		
	SHEET 1 OF 1		

PARTS LIST

QTY.	DESCRIPTION	PART NO.	ITEM NO.

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: MANUAL TIMING FUNCTIONS PART 1

SIZE	CODE	NUMBER	REV.
D	FD	PDP12-Ø-10	E

DIST

DEC FORM NO. DRD 102A

SIZE D | CODE FD | NUMBER PDP12-Ø-10 | REV E

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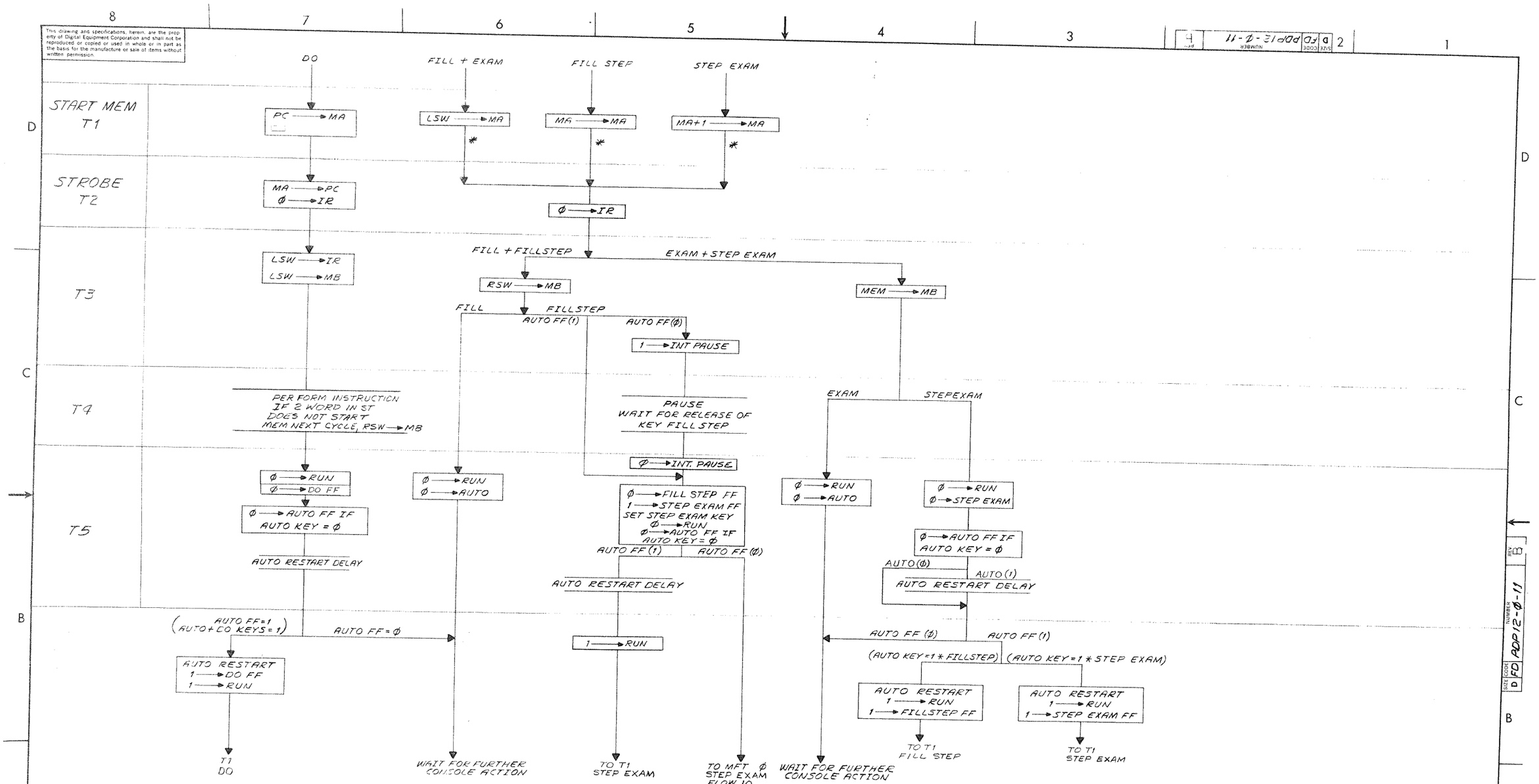

▭ LINC MODE { PC 2-11 → MA 2-11 ; IF 3-4 → MA Ø-1 }

8 MODE PC Ø-11 → MA Ø-11

* GNI IS DISABLED THEREFORE NO MAJOR STATE

REVISIONS			
CHK	CHANGE NO.	REV.	
[illegible]	EP12 - 00015	A	
John Mayo 3-16-67	L. GALE 10-17-67		
FV	12-000085	B	
Frank Kasper	SALE 2-28-70		

DEC FORM NO. CPD 102A

QTY.	DESCRIPTION	PART NO.	ITEM NO.
	PARTS LIST		

UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINAL SURFACE QUALITY
REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL

FINISH

DRN.	Joe Mayo	DATE 9-26-68
CHK'D.	[illegible]	DATE 2/12/69
ENG.	[illegible]	DATE 2/14/69
PROJ. ENG.	[illegible]	DATE 2/14/69
PROD.	[illegible]	DATE 2/14/69

FIRST USED ON PDP-12

SCALE

SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE
MANUAL TIMING FUNCTIONS
PART 2

SIZE	CODE	NUMBER	REV.
D	FD	PDP12-Ø-11	B

DIST.

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ENTER HERE FROM END OF PREVIOUS INSTRUCTION (GNI TRUE)

EVENT TIME

START MEM T 1

NOT BRK OR INT

DO FF = Ø

PC + SKIP → MA 2-11
IF 5-9 → MA Ø-1
1 → FETCH

DO FF = 1

PC 2-11 → MA 2-11
IF 3-9 → MA Ø-1
1 → FETCH

BRK OR INT

PROG

1 → INTERRUPT

DATA

3 CYCLE

1 → WC

NOT 3 CYCLE

NOT TAPE

1 → BREAK

TAPE

1 → TAPE BREAK

STROBE T 2

MA+1 → PC

Ø → IR

MA → PC

Ø → IR

T 3

MEM → MB
MEM → IR
Ø → SKIP
Ø → H

LSW → MB
LSW → IR

T 4

→ CONT

MSC

N = Ø-3

N = 4-11

N = 12-17

LIF

LDF

T 5

N

Ø → RUN

1 — I = Ø AC → TAPE EXT REG
I = 1 TAPE EXT REG → AC

2 — SELECT PDP-8 MODE

3 — I = Ø TAC → AC
I = 1 TAC → TMA SETUP

Q I=Ø	AC BIT	
	AC	AC BIT = 1 SET FF
	BIT	AC BIT = Ø CLEAR FF
	2	TRAP FLIP-FLOP
	3	TAPE TRAP
	4	HALF SIZE CHARACTER
	5	FAST SAMPLE
	6	DISABLE TELETYPE INTERRUPT
	7	GENERATE IO PWR CLEAR

N

4 I=1 — CONTROL FLIP-FLOPS TO AC

5 — MQ N → AC N+1

6 — Ø → PC SAVE

7

10

11 — CLEAR → AC
CLEAR → LINK
CLEAR → MQ

N

12

13

14 — AC 6-11 → R Ø-5

15 — R Ø-5 → AC 6-11

16 — NO OPERATION

17 — $\overline{AC}$ → AC

MB Ø7-11 →
IB ØØ-Ø4
Ø → INHIBIT SYNC

1 → INT INHIBIT
LOAD SAVE FIELD

MB Ø7-11 →
DF ØØ-Ø4

NEXT INSTRUCTION

▲ INDICATES 10 BIT ADDITION (BITS 2-11)

REVISIONS									
CHK	CHANGE NO	REV							
[illegible]	EP12-00002	A	J. SCANLON	[illegible]	12/6/68				
CHB	EP12-00003	B	T. Gaulin	5-30-69	GALE				
CHB	EP12-00015	C	L. GALE	8/8/69					
FV	12-00085	D	T. Gaulin	9-23-70	GALE	Mark	9-28-70		

QTY.	DESCRIPTION	PART NO.	ITEM NO.
	PARTS LIST		

UNLESS OTHERWISE SPECIFIED
UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINAL SURFACE QUALITY
REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL

FINISH

DRN	[illegible]	DATE 12/4/68
CHK D.	[illegible]	DATE 2/19/69
ENG	[illegible]	DATE 2/19/69
PROD. ENG.	[illegible]	DATE 2/19/69
PROD.	[illegible]	DATE 2/19/69

FIRST USED ON
PDP-12

SCALE

SHEET 1 OF 1

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
LINC FETCH
1A

SIZE	CODE	NUMBER	REV.
D	FD	PDP12-Ø-12	D

DIST.

SIZE	CODE	NUMBER	REV
D	FD	PDP12-Ø-12	D

DEC FORM NO. DRD 102A

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SIZE	CODE	NUMBER	REV
D	FD	PDP12-Ø-13	E

EVENT TIME

START MEM T1

STROBE T2

T3

T4

T5

JMP • X ≠ Ø
+
JMP • X = Ø • SAVE PC (Ø)

FROM 1A

EOR
SCR
ROL

N=Ø | N≠Ø

1 → RECYCLE SYNC
1 → T5 RECYCLE *

SKL
SNS
SKP

I=Ø + COND MET
I=1 + NOT COND MET

1 → SKIP

JMP
X ≠ Ø
• SAVE PC (1)

Ø → PC Ø-11

ADD, STC
DIS,
XSK

IBØ-4 → IFØ-4

Ø → INT INHIBIT
IF INHIBIT SYNC=1

N=Ø | N≠Ø

ROR | SCR | ROL

Ø → RECYCLE SYNC
ONE MORE T5
Ø → T5 RECYCLE

AC_N → AC_N-1
MQ → MQ_N-1
AC11 → MQØ

AC_N → AC_N-1
MQ → MQ_N-1
AC11 → MQØ
ACØ → ACØ

AC_N → AC_N+1

INCLUDE LINK IN SHIFT PATH IF IR7=1

(N-1) → N

NEXT INSTRUCTION

1 → EXECUTE

* OCCURS AT OFF PAUSE

REVISIONS			
CHK	CHANGE NO.	REV.	
mcb	EP12-00002	A	J. SCANLON 12/1/68
mcb	EP12-00003	B	T. Gwillim 5-21-69 GALE
mcb	EP12-00016	C	T. Gwillim 11-6-69 GALE
EV	EM12-00036	D	T. Gwillim 2-2-70 GALE
EV	12-00085	E	3-23-70 GALE

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

UNLESS OTHERWISE SPECIFIED

UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 | FRACTIONS ± 1/64 | ANGLES ± 0°30'
FINAL SURFACE QUALITY √
REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL

FINISH

DRN	Joe Devio	DATE 10/4/68
CHK'D	J. Scanlon	DATE 2/11/69
ENG	T. G.	DATE 2/11/69
PROJ ENG		DATE
PROD	Hall	DATE 3/4/69

FIRST USED ON
PDP-12

SCALE

SHEET 1 OF 1

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
LINC FETCH
1B

SIZE	CODE	NUMBER	REV
D	FD	PDP12-Ø-13	E

DIST.

DEC FORM NO.
DRD 102A

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EVENT TIME

START MEM T1

STROBE T2

T3

FROM FETCH 1A

OPR

EXC NO INST

MTP

SET

[IRØ2(1)*IRØ,1=(Ø)] (IB+HB)

SAM

T4

N = 16
N = 17
N = ØØ

TRAP EN (1)

TRAP EN (1)

TRAP EN (Ø)

TRAP EN(Ø)

1 → INT INH
Ø → INH SYNC

NOT SAM PAUSE

SAM PAUSE

1 → RECYCLE SYNC

1 → T5 RECYCLE*

T5

N=ØØ (IOT LINC MODE)

N=16

N=17

RSW → AC

LSW → AC

ENT TRAP(1) * ENT TRAP(1)

ENT TRAP(Ø) + ENT TRAP(Ø)

I=Ø

I=1

(I=1*B=Ø)

NOT(I=1*B=Ø)

RECYCLE UNTIL SAM IS COMPLETE

A-D BUFFER → AC

1 → EXECUTE

NEXT INSTRUCTION

1 → INTERRUPT

NEXT INSTRUCTION

1 → INTERRUPT

1 → DEFER

1 → EXECUTE

1 → DEFER

NEXT INSTRUCTION

1 → EXECUTE (SEE TAPE TIMING)

* OCCURS AT OFF PAUSE

REVISIONS					
CHK	CHANGE NO.	REV.			
DHS	EP12-00003	A	R Dunn 2-2-69	GALE	
DHS	EP12-00015	B	L GALE		
FV	12-00065	C	L GALE		

DEC FORM NO. DRD 102A

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

UNLESS OTHERWISE SPECIFIED

UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINAL SURFACE QUALITY
REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL

FINISH

DRN. Lee Opsea DATE 10-5-68
CHK'D [illegible] DATE 2/15/69
ENG. [illegible] DATE 2/15/69
PROG. ENG. [illegible] DATE 2/15/69
PROD. [illegible] DATE 2/19/69

FIRST USED ON PDP-12

SCALE

SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE LINC FETCH 2

SIZE D CODE FD NUMBER PDP12-Ø-14 REV. C

DIST.

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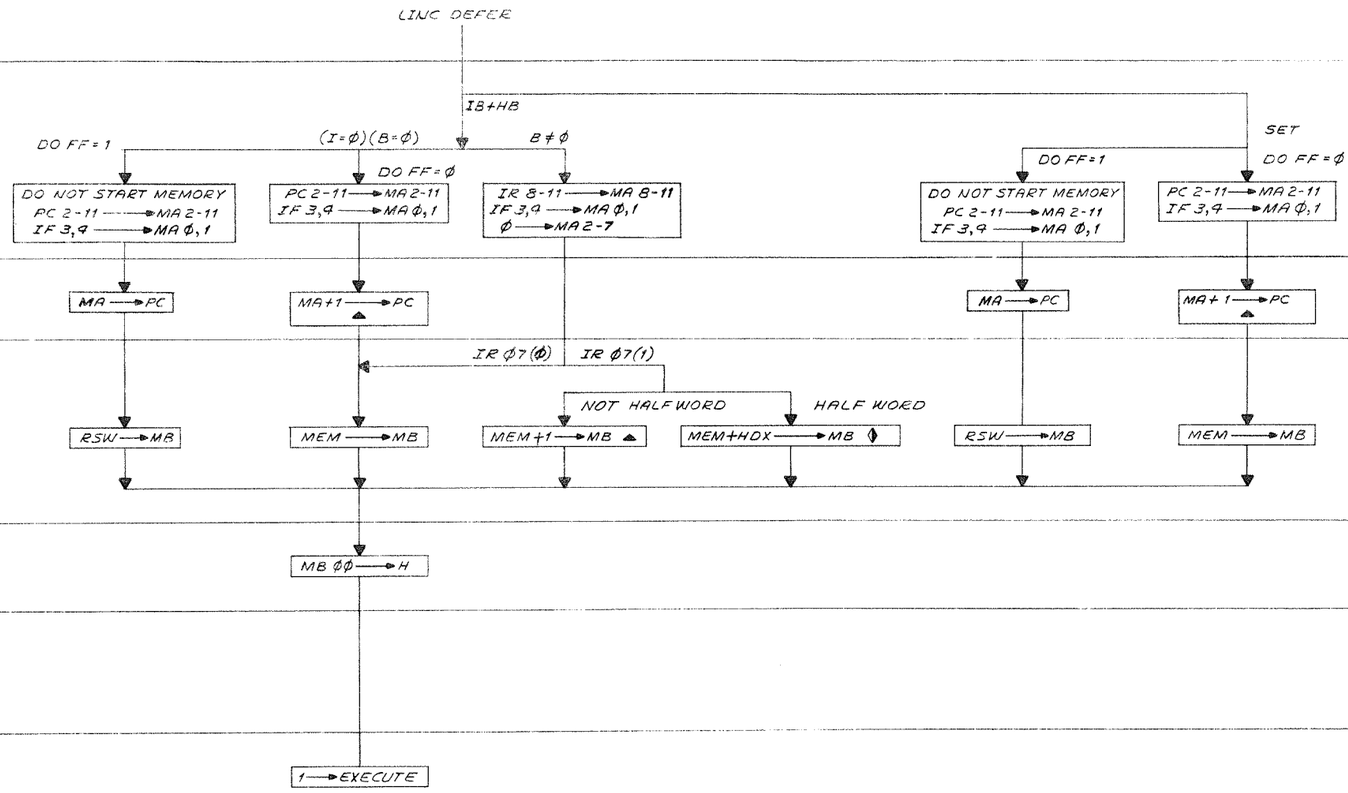
EVENT TIME	
START MEM T1	
STROBE T2	
T3	
T4	
T5	



▲ INDICATES 10 BIT ADDITION (BITS 2-11)
◆ HALF WORD INDEXING

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINAL SURFACE QUALITY √
REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL

FINISH

DRN.	Joe Ogna	DATE 24 AUG 68
CHK'D	D Scanlon	DATE 2/14/69
ENG.	[illegible]	DATE 2/19/69
PROJ. ENG.	[illegible]	DATE 2/19/69
PROD.	[illegible]	DATE 2/19/69

FIRST USED ON: PDP-12

SCALE

SHEET OF

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: LINC DEFER

SIZE	CODE	NUMBER	REV.
D	FD	PDP12-Ø-15	

DIST.

REVISIONS
REV.
CHANGE NO

SIZE D CODE FD NUMBER PDP12-Ø-15 REV.

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EXECUTE

EVENT TIME

START MEM T1

IB + HB

I=1 * B=Ø
DO FF=Ø
PC 2-11 → MA 2-11
IF 3-4 → MA 2-1

I=1 * E=1
CO FF=1
DO NOT START MEMORY

NOT(I=1 * B=Ø)
MB → MA 2-11

STROBE T2

MA+1 → PC

USE RSW INSTEAD OF MEM AT T3

LDA | STA | ADA | ADM | LAM | BCL BSE BCO SAE

CONT.

T3

MEM → MB | AC → MB | MEM → MB | Σ(MEM & AC) → MB → AC, OVERFLOW → FLO FF | Σ(LINK & MEM & AC) → MB → AC, CARRY → LINK, OVERFLOW → FLOW FF | MEM → MB

BCL | BSE | BCO | SAE

T4

MB → AC

Σ MB & AC → AC
OVERFLOW → FLO FF

MB BIT CLEAR → AC

MB BIT SET → AC

MB BIT CLEAR → AC
MB BIT SET → AC

T5

AC=MB THEN 1 → SKP

NEXT INSTRUCTION

▲ INDICATES 1Ø BIT ADDITION (BITS 2-11)

△ LINC INDIRECT ADDRESSING [MB 2-11 → MA 2-11 { MB Ø1=1 DF 3-4 → MA Ø-1 ; MB Ø1=Ø IF 3-4 → MA Ø-1 }]

REVISIONS	CHK	CHANGE NO.	REV.
		EP12-00003	A
	FV	12-00085	B

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 | FRACTIONS ± 1/64 | ANGLES ± 0°30'
FINAL SURFACE QUALITY √
REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL

FINISH

DRN. Joe Ogren DATE 9-SEPT-68
CHK'D J Scanlon DATE 2/16/67
ENG. DATE
PROJ. ENG. DATE
PROD. Niall DATE

FIRST USED ON PDP-12

SCALE

SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE LINC EXECUTE

SIZE D | CODE FD | NUMBER PDP12-Ø-16 | REV. B

DIST.

FORM NO 102A

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EXECUTE (CONT.)

EVENT TIME

START MEM T1

STROBE T2

T3

T4

T5

IB+HB (CONT.)

SRO: $MEM_N \rightarrow MB_{N-1}$

LDH: $MEM \rightarrow MB$; $MEM \rightarrow AC$

STH: H=Ø: $AC_R \rightarrow MB_L$, $MEM_R \rightarrow MB_R$; H=1: $AC_R \rightarrow MB_R$, $MEM_L \rightarrow MB_L$

SHD: $MEM \rightarrow MB$

DSC: $MEM \rightarrow MB$

DISPLAY BUSY: 1 → INT PAUSE

DISPLAY NOT BUSY

T4: H=Ø: $AC_L \rightarrow AC_R$, Ø → AC_L ; H=1: $AC_R \rightarrow AC_R$, Ø → AC_L

T4: H=Ø: $AC_R \rightarrow AC_L$, $AC_L \rightarrow AC_R$; H=1

T5: IF MBØØ=Ø, 1 → SKIP

T5: IF $AC_L \neq MB_L$ THEN 1 → SKIP

T5: $AC_R \rightarrow AC_L$, $AC_L \rightarrow AC_R$

T5: IF $AC_R \neq MB_R$ THEN 1 → SKIP

PAUSE
WAIT UNTIL PREVIOUS DISPLAY IS DONE

MB → INT REQ
AC → VERT
Ø → VA7-1Ø
1 → HA9
Ø → HA1Ø

1 → EXECUTE 2

NEXT INSTRUCTION

REVISIONS			
CHK	CHANGE NO.	REV.	
JHB	EP12-00003	A	7-21-70
FV	12-00085	B	9-23-70

UNLESS OTHERWISE SPECIFIED			
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30' FINAL SURFACE QUALITY REMOVE BURRS AND BREAK SHARP CORNERS	DRN.	DATE 10/4/67	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
	CHKD.	DATE 2/19/68	
MATERIAL	ENG.	DATE 2/19/68	TITLE LINC EXECUTE
	PROJ. ENG.	DATE 2/19/68	
FINISH	PROD.	DATE 3/4/68	
	FIRST USED ON PDP-12		SIZE D CODE FD NUMBER PDP12-Ø-17 REV. B
	SCALE		
	SHEET 1 OF 1		DIST.

QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST			

SIZE D CODE FD NUMBER PDP12-Ø-17 REV B

DEC FORM NO. LMD 102A

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EXECUTE

EVENT TIME

START MEM T1

STROBE T2

T3

T4

T5

ENTER

ADD
STC

MB 2-11 → MA 2-11
IF 3,4 → MA Ø,1

ADD

MEM → MB

MB+AC → AC

OVERFLOW → FLOW

STC

AC → MB

Ø → AC

JMP

Ø → MA 2-11
IF 3,4 → MA Ø,1

SAVE PC (1)

PC → MB
1 → MB Ø,1

MEM → MB

1 → SAVE PC

IR 2-11 → PC 2-11
IF 3-4 → PC Ø,1
1 → INHIBIT SYNC

SAVE PC (Ø)

XSK
DIS

IR 8-11 → MA 8-11
Ø → MA 2-7
IF 3,4 → MA Ø,1

I=Ø

MEM → MB

I=1

MEM+1 → MB

XSK

MB 2-11 = 1777
1 → SKP

DIS

DISPLAY BUSY

1 → INT PAUSE

RESTART WHEN DISPLAY IS FINISHED

DISPLAY NOT BUSY

MB Ø → CHANNEL
1 → ACTIVE
AC → VERT
MB → HORZ
1 → IN 11
Ø → VA 7-10
1 → HA 9
Ø → HA 10

TO DISPLAY CONTROL FLOW DIAGRAM

SET

I=1

DO NOT START MEMORY
PC 2-11 → MA 2-11

MA → PC

RSW → MB

I=Ø

DO FF=Ø

PC 2-11 → MA 2-11

MA+1 → PC

MEM → MB

MB → MA

1 → EXECUTE 2

MTP
IOT = [OPR * N = ØØ]

DO FF=(1)

DO NOT START MEMORY
PC 2-11 → MA 2-11

MA 2-11 → PC 2-11

RSW → MB

NO PAUSE (Ø)

1 → INT PAUSE

QN BN → TAPE CONTROL
START TAPE EXECUTION

RESTART ON COMMAND FROM TAPE CONTROL

NOT MTB

1 → TAPE BREAK

DO FF=(Ø)

PC 2-11 → MA 2-11
IF 3,4 → MA Ø,1

MA+1 → PC

[OPR * N=ØØ]=IOB

MEM → MB

MTP [OPR * N=ØØ]=IOB

NO PAUSE (1)

1 → IOT PAUSE

MTB

TB → AC

IOT PAUSE

MB 11 (1) → IOP 1

MB 10 (1) → IOP 2

MB 09 (1) → IOP 4

Ø → IOT PAUSE

▲ INDICATES 1Ø BIT ADDITION (BITS 2-11)

△ INDICATES LINC INDIRECT ADDRESS MB 2-11 → MA 2-11 {IF MB Ø1=1 DF 3-9 → MA Ø-1 ; IF MB Ø1=Ø IF 3-9 → MA Ø-1}

NEXT INST

REVISIONS				
CHK	CHANGE NO	REV		
	EP12-00002	A	J. SCANLON 5/22/67	
	EP12-00003	B		
	12-00055	C	GALE 6/20/68	

UNLESS OTHERWISE SPECIFIED			
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30' FINAL SURFACE QUALITY REMOVE BURRS AND BREAK SHARP CORNERS	DRN. Joe Sousa	DATE 10/4/65	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
	CHK. G. Scanlon	DATE 2/15/67	
	ENG.	DATE 2/17/67	TITLE LINC EXECUTE
	PROJ. ENG.	DATE 2/17/67	
	PROD. M Call	DATE 2/17/67	
MATERIAL	FIRST USED ON PDP 12		SIZE D CODE FD NUMBER PDP12-Ø-18 REV. C
FINISH	SCALE		DIST.
	SHEET 1 OF 1		

DEC FORM NO DPD 102A

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START MEM T1

STROBE T2

MUL

T3

MEM → MB
Ø → N (IR 8-11)

T4

AC ØØ = Ø | AC ØØ = 1

AC → MQ
Ø → LINK

$\overline{AC}$ → MQ
1 → LINK

1 → RECYCLE SYNC

OFF PAUSE

1 → TS RECYCLE

T5

MB → AC

N = 17
AC ØØ = Ø | AC ØØ = 1
AC → MB
AC → AC
LINK → LINK
$\overline{AC}$ → MB
$\overline{AC}$ → AC
$\overline{LINK}$ → LINK

N = 16
Ø → AC

N ≠ 2
MQ 11 = Ø | MQ 11 = 1
AC_N → AC N−1
Σ AC+MB → AC N−1
Σ AC 11 → MQ ØØ
MQ_N → MQ N+1

N = 2
H = 1 | H = Ø
AC → AC
MQ_N → AC N+1

N = 1
LINK = Ø | LINK = 1
AC → AC
$\overline{AC}$ → AC
Ø → RECYCLE SYNC

T5D

(N−1) → N

N = 1
Ø → TS RECYCLE

NEXT INSTRUCTION

REVISIONS	REV	CHK	CHANGE NO
	A	FV	1-3055

DATE 9-22-70

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 | FRACTIONS ± 1/64 | ANGLES ± 0°30'
FINAL SURFACE QUALITY
REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL

FINISH

		DATE
DRN.	Jas Jones	2/5/69
CHKD	D Fisher	2/5/69
ENG.	Lee L.	2/14/69
PROJ. ENG.	Lee L.	2/14/69
PROD.	M Cuttle	2/19/69

FIRST USED ON
PDP-12

SCALE

SHEET 1 OF 1

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
LINC EXECUTE

SIZE	CODE	NUMBER	REV.
D	FD	PDP12-Ø-19	A

DIST.

FORM NO. 152A

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EXECUTE 2

EVENT TIME

START MEM T1

DSC

1 → MA 2-11
IF 3-9 → MA Ø-1

SET

IR 8-11 → MA 8-11
Ø → MA 2-7
IF 3-9 → MA Ø-1

STROBE T2

SIZE (1) (FULL SIZE)

AC Ø-6 → AC Ø-6
$3Ø_8$ → AC 7-11

SIZE (Ø) (HALF SIZE)

AC Ø-7 → AC Ø-7
$1Ø_8$ → AC 8-11

T3

Σ MEM ≠ $1Ø_8$ → MB

Σ MEM ≠ $Ø_8$ → MB

T4

Ø → VB-11
MB → HORZ

T5

SIZE (Ø) SIZE (1) (FULL SIZE)

1 → IIA1Ø

1 → V7

1 → ACTIVE

TO DISPLAY CONTROL FLOW DIAGRAM

TO NEXT INSTRUCTION

TO NEXT INSTRUCTION

▲ INDICATES 1Ø BIT ADDITION (BITS 2-11)

INTERRUPT

DF * IF → SAVE FIELD BUFFER
Ø → DF, IF

PDP-8 MODE

Ø → MA
Ø → INT EN

LINC MODE

NOT TRAP

ØØØØ → MA
Ø → INT EN

TRAP

Ø1ØØ → MA
Ø → INT EN
Ø → TRAP

Ø → IR

PC + SKIP → MB

MA + 1 → PC

TO NEXT INSTRUCTION

▭ THESE FUNCTIONS OCCUR AT TPSD OF PREVIOUS CYCLE

REVISIONS				
CHK	CHANGE NO.	REV.		
[illegible]	EP12-00015	A	[illegible]	12/18/68
L. GALE	[illegible]	[illegible]	[illegible]	12-17-68
FV	12-00035	B	[illegible]	9-22-70
GALE	[illegible]	[illegible]	[illegible]	9-22-70

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

UNLESS OTHERWISE SPECIFIED

UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINAL SURFACE QUALITY √
REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL

FINISH

DRN	Joe Agrea	DATE 6 SEPT 68
CHK	J. Scanlon	DATE 2/19/69
ENG	[illegible]	DATE 2/19/69
PROJ. ENG.	[illegible]	DATE 2/19/69
PROD.	[illegible]	DATE 2/19/69

FIRST USED ON PDP-12

SCALE

SHEET OF

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE
EXECUTE 2 & INTERRUPT

SIZE	CODE	NUMBER	REV.
D	FD	PDP12-Ø-2Ø	F

DIST.

DEC FORM NO. SPD 102A

PDP12-Ø-2Ø FD D REV B

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START MEM T1

STROBE T2

T3

T4

T5

ENTER HERE FROM END OF PREVIOUS INSTRUCTION

NOT BREAK REQ

BREAK REQ

PROG DATA

1→INTERRUPT

3 CYCLE NOT 3 CYCLE

1→WC

NOT TAPE TAPE

1→BREAK

1→TAPE BREAK

DO FF=Ø

DO FF=1

PC+SKIP→MA
1→FETCH

PC→MA
1→FETCH

MA+1→PC
Ø→IR

MA→PC

Ø→SKIP
MEM→MB
MEM→IR
Ø→H

LSW→MB
LSW→IR

AND
TAD
ISZ
DCA
JMS

JMP

OPR

IOT

IR Ø3=Ø

IR Ø3=1

IR Ø3=1

IR Ø3=Ø

IR Ø4=1

IR Ø4=Ø

MB 5-11→PC 5-11
MA Ø-4→PC Ø-4

MB 5-11→PC 5-11
Ø→PC Ø-4

MB Ø4 MB Ø6

Ø	Ø	AC→AC
Ø	1	$\overline{AC}$→AC
1	Ø	Ø→AC
1	1	AC+$\overline{AC}$→AC

MB Ø5 MB Ø7

Ø	Ø	L→L
Ø	1	$\overline{L}$→L
1	Ø	Ø→L
1	1	L+$\overline{L}$→L

MB 11(1)→CARRY IN

IR Ø3=Ø

IR Ø3=1

IR 11=Ø

IR 11=1

MB Ø6*AC=Ø
+
MB Ø5*AC ØØ=1
+
MB Ø7*L=1
1→SKIP IN

EAE INST

*
1→IOT PAUSE

MB Ø8=Ø
SKIP IN→SKIP

MB Ø8=1
$\overline{SKIP\ IN}$→SKIP

MB Ø9=1

ROTATE AC&L LEFT 1

MB Ø8=MB Ø9=Ø

NO SHIFT

MB Ø8=1

ROTATE AC&L RIGHT 1

MB 1Ø=Ø

MB 1Ø=1

ROTATE AC&L LEFT 1

NO SHIFT
AC→AC
L→L

MB 1Ø=1

ROTATE AC&L RIGHT 1

NO SHIFT

MB Ø4	MB Ø9	
Ø	Ø	AC→AC
Ø	1	RS+AC→AC
1	Ø	Ø→AC
1	1	RS→AC

MB 1Ø=1
Ø→RUN

IOT PAUSE

MB 11=1
IOP 1

MB 1Ø=1
IOP 2

MB Ø9=1
IOP 4

Ø→IOT PAUSE

EXECUTE

DEFER

FETCH

* OCCURS AT OFF PAUSE

REVISIONS

REV	CHANGE NO.	CHK	
A	EP12-00002		J. SCANLON 9-24-70
B	12-00085	FV	Crowther 9-24-70
	SALE		DM 3-22-72

DEC FORM NO. DRD 102A

UNLESS OTHERWISE SPECIFIED
UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINAL SURFACE QUALITY
REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL

FINISH

DRN. Joe Yorra DATE 8-7-68
CHKD. J. Scanlon DATE 2/16/68
ENG. DATE
PROJ. ENG. DATE 2/19/69
PROD. DATE

FIRST USED ON PDP 12

SCALE

SHEET 1 OF 1

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
PDP-8 MODE FETCH

SIZE D | CODE FD | NUMBER PDP12-Ø-21 | REV P

DIST.

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DEFER

START MEM T1

IR Ø4 = Ø: MB 5-11 → MA 5-11; Ø → MA Ø-4

IR Ø4 = 1: MB 5-11 → MA 5-11; MA Ø-4 → MA Ø-4

STROBE T2

T3

AUTO INDEX: MEM + 1 → MB

NOT AUTO INDEX: MEM → MB

T4

JMP: MB → PC

NOT JMP

1 → FETCH

NEXT INST

1 → EXECUTE

T5

EXECUTE

FROM FETCH

IR Ø7 = Ø: MB 5-11 → MA 5-11; Ø → MA Ø-4

IR Ø4 = 1: MB 5-11 → MA 5-11; MA Ø-4 → MA Ø-4

FROM DEFER: MB → MA

AND TAD: MEM → MB

AND: AC, BCL → AC

ISZ: MEM + 1 → MB; CARRY → SKP

TAD: Σ AC AND MB → L, AC

$\overline{AC}$ → AC

1 → FETCH

NEXT INST

DCA: AC → MB; Ø → AC

JMS: PC → MB; MA + 1 → PC

REVISIONS	REV	CHK	CHANGE NO	REV	CHK	CHANGE NO
	A	GALE	EP12-COOL-2	B	GALE	12-00085

J. SCANLON 9/25/70

T. Cudlip 9-23-70

GALE 9/28/70

D. Mabel 9/28/70

UNLESS OTHERWISE SPECIFIED
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30' FINAL SURFACE QUALITY √ REMOVE BURRS AND BREAK SHARP CORNERS
MATERIAL
FINISH

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

DRN. Joe Ogren	DATE 23 AUG 68	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
CHK'D Scanlon	DATE 9/16/70	
ENG.	DATE	TITLE
PROJ. ENG.	DATE	PDP 8 MODE DEFER & EXECUTE
PROD. T. Cudlip	DATE 9/28/70	
FIRST USED ON PDP-12		SIZE D CODE FD NUMBER PDP12-Ø-22 REV B
SCALE		DIST.
SHEET 1 OF 1		

DEC FORM NO DRD 102A

SIZE D CODE FD NUMBER PDP12-Ø-22 REV B

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	WORD COUNT	CURRENT ADDRESS	BREAK	TAPE BREAK INTERRUPT
START MEM T1	DATA A(C) → MA EXT DA M → BF Ø-2	MA+1 → MA	ENTER FROM CA: MB → MA ENTER SINGLE CYCLE BREAK: DATA ADD → MA, EXT DAØ 2 → BFØ 2	TAPE ADD → MA
STROBE T2	Ø → IR	Ø → IR	Ø → IR	Ø → TAPE BREAK RQST Ø → IR IN MEM / OUT MEM
T3	MEM+1 → MB CARRY → WC OVERFLOW	INCREMENT CA: MEM+1 → MB NOT INCREMENT CA: MEM → MB	DATA OUT: MEM → MB DATA IN: DATA IN → MB INCR. MEM: MEM+1 → MB, CARRY → WCO	IN MEM: TMA+1 → TMA TAPE BUF → MB OUT MEM: MEM → MB
T4				NO PAUSE (Ø): 1 → INT PAUSE NO PAUSE (1): NOT LAST WORD / LAST WORD
T5	1 → CA	1 → BREAK	NEXT INST	NOT LAST WORD: PAUSE WAIT FOR TAPE WORD → TAPE BREAK LAST WORD: *Ø → INT PAUSE; CHECKSUM → AC → NEXT INST

* OCCURS AT OFF PAUSE

REVISIONS	REV	CHANGE NO	CHK	DES
	A	EP12-00009	T. Gould 8-22-68	GALE 8-22-68
	B	EP12-00015	John Mann 10-17-69	L. GALE 10-17-69
	C	12-00085	T. Gould 1-28-70	GALE 1-28-70

DEC FORM NO 1001 102A

UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINAL SURFACE QUALITY
REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL

FINISH

DRN.	Joe Sousa	DATE 23AUGGR
CHK'D	T. Gould	DATE 2/4/69
ENG.		DATE
PROJ. ENG.		DATE
PROD.		DATE

FIRST USED ON: PDP-12

SCALE

SHEET 1 OF 1

QTY.	DESCRIPTION	PART NO.	ITEM NO.
	PARTS LIST		

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: BREAK

SIZE	CODE	NUMBER	REV
D	FD	PDP12-Ø-23	C

DIST.

SIZE D CODE FD NUMBER PDP12-Ø-23 REV C

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MASTER DRAWING LIST

DWG. NO.	REV. LET.	NO. OF SHEETS	TITLE
A-ML-PDP12-0	REF		PDP-12 SYSTEM
D-BS-EP12-0-CIN	D	1	CONSOLE INDICATORS
D-BS-EP12-0-CPR	H	1	CENTRAL PROCESSOR RUN
D-BS-EP12-0-CPS	R	1	CENTRAL PROCESSOR STATES
D-BS-EP12-0-CPT	E	1	CP TIME STATES
D-BS-EP12-0-CPTP	F	1	CENTRAL PROCESSOR TIME PULSES
D-BS-EP12-0-CSI	C	1	CONSOLE SWITCH INPUTS
D-BS-EP12-0-CST	K	1	CONSOLE STARTS
D-BS-EP12-0-CYI	B	1	CARRY INSERTS
D-BS-EP12-0-FLE	C	1	FLOW & END SHIFT
D-BS-EP12-0-FLK	D	1	LINK LOGIC
D-BS-EP12-0-ICB	H	1	IO & EXT MEM CABLES
D-BS-EP12-0-INR	C	1	INSTRUCTION REGISTER
D-BS-EP12-0-INS	H	1	INSTRUCTIONS
D-BS-EP12-0-IOA	A	1	IO INPUT PART A
D-BS-EP12-0-IOB	F	1	IO INPUT PART B
D-BS-EP12-0-IOC	H	1	IO CONTROL & TIMING
D-BS-EP12-0-IOO	A	L	IO OUTPUT BUFFERS
D-BS-EP12-0-IOR	B	1	RELAY BUFFER
D-BS-EP12-0-IPC	K	1	INTER PROC CABLES
D-BS-EP12-0-MEA	H	1	MEM EXTN AC INPUTS
D-BS-EP12-0-MPG	L	1	MEM PAGE EXTN CONTROLS
D-BS-EP12-0-MOR	B	1	MUL QUOTIENT
D-BS-EP12-0-PMA	B	1	PROCESSOR MISCELLANEOUS A
D-BS-EP12-0-PMB	A	1	PROCESSOR MISCELLANEOUS B
D-BS-EP12-0-PRA	D	1	PRA PROCESSOR BITS 0 & 1
D-BS-EP12-0-PRB	C	1	PRB PROCESSOR BITS 2 & 3
D-BS-EP12-0-PRC	C	1	PRC PROCESSOR BITS 4 & 5
D-BS-EP12-0-PRD	C	1	PRD PROCESSOR BITS 6 & 7
D-BS-EP12-0-PRE	C	1	PRE PROCESSOR BITS 8 & 9
D-BS-EP12-0-PRF	C	1	PRF PROCESSOR BITS 10 & 11
D-BS-EP12-0-PRG	B	1	PROCESSOR REGISTER GATING

REVISIONS			
REV.	DATE	CHG. NO.	APP'D.
AM	6/71	00040	D.M.
AN	6/71	00041	R.M.
AP	8/71	00042	R.M.
AR	10/71	00043	R.M.
AS	1/72	00044	R.M.
AT	2/72	00045	R.M.
AU	7/72	00046	R.I.

DRN. J. Aprea	DATE 030769	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
CHK'D. R.Hutnak	DATE 030769		
ENG. L.Gale	DATE 031069	TITLE PDP-12 PROCESSOR	
PROJ. ENG. L.Gale	DATE 031069		
PROD. D. Call	DATE 031069		
FIRST USED ON PDP-12		SIZE A	CODE ML
SCALE		NUMBER EP12-0	REV. AU
SHEET 1 OF 2		DIST.	

DEC FORM NO. DRA 103

MASTER DRAWING LIST

DWG. NO.	REV. LET.	NO. OF SHEETS	TITLE
D-BS-EP12-0-RCA	A	1	REGISTER CONTROL A
D-BS-EP12-0-RCB	D	1	REGISTER CONTROL B
D-BS-EP12-0-RCC	B	1	REGISTER CONTROL C
D-BS-EP12-0-RCD	D	1	REGISTER CONTROL D
D-BS-EP12-0-RCL	H	1	PROCESSOR REGISTER LOAD CONTROL
D-BS-EP12-0-RCS	B	1	REG SHIFT & MO INPUTS
D-BS-EP12-0-SKH	D	1	SKIP FF & H BITS
D-BS-EP12-0-SKL	C	1	EP12 SKIPS
D-BS-EP12-0-SLA	A	1	SPECIAL LEVELS 1
D-BS-EP12-0-TTI	B	1	TTI TELETYPE RECEIVER
D-BS-EP12-0-TTO		1	TTO TELETYPE TRANSMITTER
D-BS-EP12-0-SRF	A	1	SET & RESTORE FIELDS
A-WL-EP12-0-4	B	3	DC POWER PROCESSOR LOGIC
K-WL-EP12-0-3	AC		WIRE LIST
D-MU-EP12-0-1	M	2	MODULE UTILIZATION PROC
A-PL-EP12-0-1	M	3	MODULE UTILIZATION PROC (PARTS LIST)
D-AD-7005976-0-0	M	1	WIRED ASSY CP & IO (EP12)
A-PL-7005976-0-0	M	1	WIRED ASSY PL CP & IO (EP12)

REVISIONS			
REV.	DATE	CHG. NO.	APP'D.

DRN. J.Aprea	DATE 030769	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
CHK'D. R.Hutnak	DATE 030769		
ENG. L.Gale	DATE 031069	TITLE PDP-12 PROCESSOR	
PROJ. ENG. L.Gale	DATE 031069		
PROD. D.Call	DATE 031069		
FIRST USED ON PDP-12		SIZE A	CODE ML
SCALE		NUMBER EP12-0	REV. AU
SHEET 2 OF 2		DIST.	

DEC FORM NO. DRA 103

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M900 N29

A1	MPG DF Ø4 (1)L
B1	PRB MA Ø3 (1)L
C1	IOR R Ø0 (1)L
D1	PRC PC Ø4 (1)L
E1	INR IR Ø4 (1)L
F1	IOR R Ø2 (1)L
H1	PRB PC Ø3 (1)L
J1	MPG DF Ø3 (1)L
K1	INR IR Ø7 (1)L
L1	IOR R Ø1 (1)L
M1	INR IR Ø8 (1)L
N1	INR IR Ø3 (1)L
P1	PRB MA Ø2 (1)L
R1	MXR IF Ø1 (1)L
S1	INR IR Ø1 (1)L
T1	
U1	
V1	

M900 N30

A1	PRF PC 1Ø (1)L
B1	PRE MA Ø9 (1)L
C1	LCS SEARCH (1)L
D1	PRF PC 11 (1)L
E1	PRF MA 1Ø (1)L
F1	CPS FETCH (1)L
H1	PRE PC Ø9 (1)L
J1	MQR MQ Ø0 (1)L
K1	CPS EXECUTE (1)L
L1	LCS IDLE (1)L
M1	CPS DEFER (1)L
N1	PRE MA Ø8 (1)L
P1	PRC PC Ø5 (1)L
R1	IOR R Ø4 (1)L
S1	PRD PC Ø6 (1)L
T1	
U1	
V1	

M900 N31

A1	PRC AC Ø5 (1)L
B1	PRC MB Ø4 (1)L
C1	LCX EX ADD FORMAT (1)L
D1	PRD AC Ø6 (1)L
E1	PRC MB Ø5 (1)L
F1	CPS BREAK (1)L
H1	PRC AC Ø4 (1)L
J1	MQR MQ Ø5 (1)L
K1	MQR MQ Ø7 (1)L
L1	MQR MQ Ø6 (1)L
M1	LCX NO PAUSE (1)L
N1	PRB MB Ø3 (1)L
P1	PRA MB Ø0 (1)L
R1	LCS CHK WRD (1)L
S1	FLK LINK (1)L
T1	
U1	
V1	

M900 N32

A1	IOC INT EN (1)L
B1	CPS EN TRAP (1)L
C1	LIN TINR 11 (1)L
D1	CPT INT PAUSE (1)L
E1	CPT IOT PAUSE (1)L
F1	CPR 8 MODE H
H1	PRF MB 11 (1)L
J1	MQR MQ 1Ø (1)L
K1	CST AUTO (1)L
L1	CPR RUN (1)L
M1	CPR L MODE H
N1	PRF AC 11 (1)L
P1	PRD MB Ø7 (1)L
R1	CPS T BREAK (1)L
S1	PRE MB Ø8 (1)L
T1	
U1	
V1	

M900 N29

A2	
B2	
C2	
D2	INR IR Ø0 (1)L
E2	PRB PC Ø2 (1)L
F2	MPG IF Ø3 (1)L
H2	PRA PC Ø0 (1)L
J2	MXR IF Ø2 (1)L
K2	MPG IF Ø4 (1)L
L2	PRA MA Ø0 (1)L
M2	PRA PC Ø1 (1)L
N2	INR IR Ø6 (1)L
P2	MXR DF Ø0 (1)L
R2	INR IR Ø2 (1)L
S2	MXR IF Ø0 (1)L
T2	PRA MA Ø1 (1)L
U2	MXR DF Ø2 (1)L
V2	MXR DF Ø1 (1)L

M900 N30

A2	
B2	
C2	
D2	PRD MA Ø7 (1)L
E2	PRE PC Ø8 (1)L
F2	MQR MQ Ø1 (1)L
H2	PRD PC Ø7 (1)L
J2	IOR R Ø3 (1)L
K2	MQR MQ Ø2 (1)L
L2	PRD MA Ø6 (1)L
M2	PRC MA Ø4 (1)L
N2	LCS BLOCK (1)L
P2	INR IR 11 (1)L
R2	PRC MA Ø5 (1)L
S2	IOR R Ø5 (1)L
T2	INR IR Ø5 (1)L
U2	INR IR Ø9 (1)L
V2	INR IR 1Ø (1)L

M900 N31

A2	
B2	
C2	
D2	PRB AC Ø2 (1)L
E2	PRB AC Ø3 (1)L
F2	LIP PROGRESS (1)L *
H2	PRA AC Ø1 (1)L
J2	CPS INTER (1)L
K2	CPS WC (1)L
L2	PRF MA 11 (1)L
M2	PRA MB Ø1 (1)L
N2	CPS CA (1)L
P2	MQR MQ Ø4 (1)L
R2	PRA AC Ø0 (1)L
S2	LCS TURN ARND (1)L
T2	PRB MB Ø2 (1)L
U2	MQR MQ Ø3 (1)L
V2	CPS EXC 2 (1)L

M900 N32

A2	
B2	
C2	
D2	PRF AC 1Ø (1)L
E2	PRF MB 1Ø (1)L
F2	LIN TINR 1Ø (1)L
H2	PRE MB Ø9 (1)L
J2	MQR MQ Ø8 (1)L
K2	FLE FLOW (1)L
L2	PRE AC Ø9 (1)L
M2	PRD MB Ø6 (1)L
N2	MQR MQ 11 (1)L
P2	MQR MQ Ø9 (1)L
R2	PRE AC Ø8 (1)L
S2	LIN TINR Ø9 (1)L
T2	PRD AC Ø7 (1)L
U2	LCX MARK (1)L
V2	SKH SKIP (1)L

*NOTE: THIS SIGNAL IS CONNECTED TO THE 'IP' LIGHT ON THE CONSOLE LIGHT PANEL.

REVISIONS		
CHK	CHANGE NO.	REV.
JB	EP12-00001	A
	ADS	
	J SCANLAN 3/13/69	
NR	EP12-00015	B
	K COTE 10/14/69	
	J SCANLAN 10/17/69	
NP	EP12-00016	C
	K.COTE 11-12-69	
	J.SCANLAN 11-14-69	
TC	EP12-00023	D
	[illegible] 6.21.70	
	D Marsh 7-2-70	

DRN. D SHEPARD	DATE 2/20/69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. J BISONETE	DATE 2/20/69	
ENG. L GALE	DATE 2/20/69	TITLE CONSOLE INDICATORS
PROJ. ENG. L GALE	DATE 2/20/69	
PROD. D CALL	DATE 2/20/69	
FIRST USED ON EP12		SIZE D / CODE 85 / NUMBER EP12-0-CIN / REV. D
SCALE		
SHEET 1 OF 1		DIST.

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CSI IF SW Ø H — E2 — M141 K38 — H2 — CPR IF SW Ø L

CSI IF SW 1 H — D2 — M141 K38 — F2 — CPR IF SW 1 L

CSI IF SW 2 H — E2 — M141 K39 — H2 — CPR IF SW 2 L

CST MFTP2 L — D1
-CSI KEY IO PRESET L — E1
M112 L10 — F1
D2, E2 — M112 L10 — F2 — CPR SET RUN L
CST AUTO RESTART H

CST AUTO (Ø)H — A1
CPR L HALT L — A1
CPR 8 HALT L — B1
M113 L09 — C1
A1, B1 — M112 L10 — C1 — CPR HALT L
CPR HALT H

INS MSC H — A1
INS N EQ Ø0 H — B1
CPS FETCH B (1)H — C1
M115 L08 — D1 — CPR L HALT L

SLA OPR2 H — E1
PRF MB 10 (1)H — F1
CPS FETCH B (1)H — H1
M115 L08 — J1 — CPR 8 HALT L

CST FILL STEP (1)L — D2
CSI KEY SS L — E2
CPR MATCH L — F2
MCT PWR STOP L — H2
M117 K05 — J2

CPS GNI H — A1
CST DO (1)H — B1
LIP PROGRESS (Ø)H — C1
CPT TS RECYCLE (Ø)H — D1
CSI (FILLS+EXAMS) H — H1
CST MFTSØ H — J1
CPR HALT H — K1
TSS UF (Ø)H — L1
LIP PROGRESS (Ø)H — M1
CSI KEY STOP H — N1
CPS GNI H — P1
M160 K06 — R1

CPR ENABLE RUN H — U2
CPTP TPS H — S2
CPR RUN M216 L07 — T2, V2, V1, K2
CST IO PRESET L

CPR IOT 6141 L

CPR SET MODE H — D1
CSI KEY LINC H — E1
M113 L09 — F1

CPR IOT 6141 H

PRB MB Ø3 (Ø)H — M1
PRC MB Ø4 (Ø)H — N1
PRC MB Ø5 (1)H — P1
PRD MB Ø6 (1)H — R1
PRD MB Ø7 (Ø)H — R2
INS N EQ Ø1 H — S2
INS IOT H — T2
+3V K10U1 H — U2
M119 K10 — V2
N1 — M111 J09 — P1
CPTP TP1 H — D2
M113 L09 — F2
RES SET L MODE L — F1, H1, J1, K1
M617 K12 — L1 — CPR L MODE H

CPTP TP1 H — D2
INS MSC H — E2
INS N EQ Ø2 H — F2
M115 K13 — H2
RES SET 8 MODE L — M1, N1, P1, R1
M617 K12 — S1 — CPR 8 MODE H

MPG MEM EXTN PRESET L — R1
M111 M38 — S1 — CPR SET MODE H
H2 — M113 L09 — K2
-CSI KEY LINC H — J2

CSI KEY F STOP H — L1
CPS FETCH B (1)H — M1
M113 L09 — N1
P1, R1 — M113 L09 — S1
CSI KEY E STOP H — L2
CPS FETCH (Ø)H — M2
M113 L09 — N2

PRA ADDRESS MATCH Ø-1 H — H1
PRB ADDRESS MATCH 2-3 H — J1
PRC ADDRESS MATCH 4-5 H — K1
PRD ADDRESS MATCH 6-7 H — K2
PRE ADDRESS MATCH 8-9 H — L2
PRF ADDR MATCH 10-11 H — M2, N2
F1 — M119 K10 — P2 — CPR MATCH L

CSI IF SW Ø H — L1
-MXF EA Ø H — M1
M141 K39 — K1
CSI IF SW 1 H — L2
-MXF EA 1 H — M2
CSI IF SW 2 H — U1
-MXF EA 2 H — V1

-CPR IF SW Ø H — U2
MXF EA Ø H — V2
M141 K38 — T2
-CPR IF SW 1 H — U2
MXF EA 1 H — V2
M141 K39 — T2
-CPR IF SW 2 H — U2
MXF EA 2 H — V2
M141 K40 — T2

REVISIONS			REVISIONS		
CHK	CHANGE NO.	REV.	CHK	CHANGE NO.	REV.
JB	EP12-00001	A	GH	EP12-00026	E
	ADS			S GOLDSBY 9/1/70	
	J SCANLAN 3/13/69			D MACKLIN 9/2/70	
	EP12-00003	B	GH	EP12-00036	F
	A WASHINGTON 6/17/69			R SOFKA 5-6-71	
	L GALE 6/20/69			J SCANLAN 5/20/71	
NR	EP12-00006	C		EP12-00044	H
	A WASHINGTON 8/8/69				
	L GALE 8/13/69				
NR	EP12-00016	D			
	K COTE 11/12/69				
	J SCANLAN 11/14/69				

DRN. D SHEPARD	DATE 2/20/69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. J BISONETE	DATE 2/20/69	
ENG. L GALE	DATE 2/20/69	TITLE: CENTRAL PROCESSOR RUN
PROJ. ENG. L GALE	DATE 2/20/69	
PROD. D GALL	DATE 2/20/69	
FIRST USED ON: EP12		
SCALE		SIZE D | CODE BS | NUMBER EP12-Ø-CPR | REV. H
SHEET 1 OF 1		DIST.

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CPS DEFER (1)L → M617 J07 → P2 CPS DEFER B (1)H

CPS EXECUTE (1)L → M617 J07 → V2 CPS EXECUTE B (1)H

D1 M111 K09 E1 CPS FETCH SET H

CPS FETCH SET L

CPS INTERRUPT SET L → E2 M111 K03 F2 CPS INTERRUPT SET H

F1 M111 K09 H1 CPS TAPE SET H

+3V K03V1 H

-CPS INTERRUPT SET H
CPS GNI H
-CPS TAPE SET H
-CPS BREAK SET H
A1 B1 C1 D1 → M117 K05 → E1 C1
CPTP TP1 H B1

CPS FETCH M216 K06 (A1, F1, C1, E1, C Ø)

CPS DEFER M216 K06 (A1, J2, E2, H2, D2, C Ø)

CPS EXECUTE M216 K06 (A1, M1, J1, L1, H1, C Ø)

CPS EXC 2 M216 K06 (K2, R2, M2, P2, L2, C Ø)

CPS INTER M216 K06 (K2, U1, P1, S1, N1, C Ø)

CPS WC M216 K06 (K2, V1, T2, V2, S2, C Ø)

CPS CA M216 K07 (A1, F1, C1, E1, B1, C Ø)

CPS BREAK M216 K07 (N2, F2, M2, R2, L2, C Ø)

CPS T BREAK M216 K07 (A1, J2, E2, H2, D2, C Ø)

+3V K03U1 H

-CSI KEY CONT H
CST MPTP0 H
+3V K03U1 H
+3V K03U1 H
F1 H1 J1 K1 → M617 J07 → L1
CPS CLR STATES L

CPS DEFER SET L

CPS EXC SET L

CPS EXC 2 SET L

CPS INTERRUPT SET L

CPS WORD COUNT SET L

CPS SET B FIELD H

-CPS 8(OPR+IOT) H
CPR 8 MODE H
INR IR Ø3 (1)H
CPS FETCH B (1)H
D2 E2 F2 H2 → M160 K08 → T2

CPS FETCH B (1)H
INS LINC INDIR H
J2 K2 → M160 K08

CPS FETCH (1)H
INR IR Ø7 B (Ø)H
INS SET H
N2 P2 R2 S2 → M160 K08

-CPS GNI H
-CPS SPECIAL CYCLE H
-CPS EXC 2 SET H
H1 J1 K1 → M117 K05 → L1

CPS BREAK SYNC (I)H

M133 PØ3 (A1, B1, C1, D1)

M611 PØ4

CPS TRAP L

CPS EXECUTE B (1)H
SLA (DSC+SET) H
D1 E1 → M113 K03 → F1

CPS GNI H
T2 U2 → M113 K03 → V2

CPS BREAK SET L

IOB 3 CYCLE H
H1 J1 → M113 K03 → K1 H2

CPS CA (1)L
P1 R1 → M113 K03 → S1

CPS BREAK SET H

CPS GNI H
CPS TAPE SYNC (1)H
CPS BREAK SYNC (Ø)H
K1 L1 M1 → M115 K13 → N1 CPS TAPE SET L

CPS GNI L → M111 K09 → D2 CPS GNI H

INS TAPE TRAP L
INS NO INST L
D2 E2 F2 H2 → M117 H35 → J2

INS LOPR H
-INS N EQ 17 H
-INS N EQ 16 H
-INS N EQ Ø0 H
F1 H1 J1 K1 → M117 H35 → L1

CPS EN TRAP (1)H
CPTP TP4 H
E1 F1 H1 → M115 K04 → J1 L1

-IOC IO PRESET H
CPS INTER (Ø)H
N2 P2 R2 → M115 J05 → S2 CPS TRAP L

CPS TRAP H → M113 K03 (M1, J1, L1)

-CPS BREAK SET H
-CPS TAPE SET H
CPS GNI H
M1 N1 P1 R1 → M117 K05 → S1 CPS INTERRUPT SET L

CPS INT SYNC (1)L
P2 R2 → M113 K03 → S2

A1 +3V J0GU1 H

PRB AC Ø2 (1)L
RCL LOAD MSC 4 H
D2 E2 → CPS EN TRAP M216 J12 (J2, H2, C Ø) → F2 CPT IO PRESET L

✱✱CPTP TPSS H
IOC START IO TIME H
P1 R1 → M112 J10 → S1

CPS CLOCK SYNC H H1

CPS BSC M216 J29 (J1, L1, M1, C Ø)

SKH CLR SKIPS L A1 ✱

INS MSC H
INS N-2 H
D1 E1 → M113 K22 → F1

-CPR IOT 6141 H
MPG INT INHIBIT (Ø)H
IOC INT DELAY (1)H
IOB INT REQ H
CPS FETCH SET H
+3V H2GU1 H
A1 B1 C1 D1 E2 F2 H2 → M119 H26 → J2 J1
CPT TS1 (1)H H1

+3V K03U1 H A1

M216 K07 (R1, M1, CPS INT SYNC (1)H; L1, CPS INT SYNC (Ø)H; C Ø, K1)

IOC INT EN (Ø)L

IOB BREAK REQ H P1

M216 K07 (V2, S1, CPS BREAK SYNC (1)H; N1, U1, CPS BREAK SYNC (Ø)H; C Ø, K2)

CPS CLR STATES L K2

LIP TAPE BRK REQ (1)H T2

CPTP OFF PAUSE H S2

M216 K07 (V2, CPS TAPE SYNC (1)H; V1, CPS TAPE SYNC (Ø)H; C Ø)

✱✱✱CPTP TP5 L
IOC OFF SAMPLE L
K1 L1 M1 → M115 K04 → N1 CPS CLOCK SYNC H

-CPS 8(OPR+IOT) L
CPS FETCH B (1)H
CPR 8 MODE H
-INS 8 JMP H
A1 B1 C1 D1 → M113 K03 → C1

INR IR Ø0 (1)H
INR IR Ø1 (1)H
A1 B1 → M113 K03 → C1

CPS FETCH B (1)H
-SLA L 1 WORD FORMAT H
E1 F1

CPS DEFER (1)H
-INS 8 JMP H
H1 J1

M160 J11 (R1)

CPS WC (1)L
CPS CA (1)L
A1 B1 C1 → M115 K04 → D1 CPS SPECIAL CYCLE H K1 L1

CPS SPECIAL CYCLE H H2 → M111 K09 → J2 CPS SPECIAL CYCLE L

CST(FILLS+EX IMFTSØ L

CPS EAEC LONG INST H
M1 N1 P1

CPS FETCH (1)L
+3V J07U1 H
D2 E2 F2 H2 → M617 J07 → J2 CPS FETCH B (1)H

✱✱✱CPTP TPSS L
CPTP TP2 L
IOC START IO TIME L
D2 E2 F2 H2 → M617 J21 → J2

CPS BRK SYNC CLK H

✱NOTE: SKH CLR SKIPS L SERVES NO LOGICAL PURPOSE HERE EXCEPT FOR POWER CLEAR. THIS CLEARS COMMON WITH FLIP FLOP ON SKH PRINT.

NOTE: PDP12'S WITH DMØI'S PERFORM THE FOLLOWING CHANGES:
✱✱ REPLACE WITH CPTP TP3 H
✱✱✱ REPLACE WITH CPTP TP5 L
H25H2-J10P1 DEL
J10P1-J04K1 DEL
H25H2-J04K1 ADD
J04P1-J10P1 ADD
J21D2-H34K1 DEL
J21D2-J05E1 ADD
K04K1-J05H1 DEL
K04K1-L13B1 DEL
L13B1-J05H1 ADD
K14K1-J10D2 DEL

REVISIONS			REVISIONS			REVISIONS			REVISIONS		
CHK	CHANGE NO.	REV.	CHK	CHANGE NO.	REV.	CHK	CHANGE NO.	REV.	CHK	CHANGE NO.	REV.
JB	EP12-00001	A	NR	EP12-00007	E	GH	EP12-00026	K		EP12-00044	P
	ADS			A WASHINGTON 8/15/69			S. GOLDSBY 9-1-70				
	J SCANLAN 3/13/69			L GALE 8/20/69			D. MACKLIN 9-2-70				
	EP12-00002	B	NR	EP12-00009	F	GH	EP12-00030	L		EP12-00046	R
	A WASHINGTON 5/20/69			A WASHINGTON 8/20/69			K WALSH 11/18/70				
	J SCANLAN 5/22/69			L GALE 8/22/69			D MACKLIN 11/9/70			IKITAIAN	
	EP12-00004	C	FV	EP12-00021	H	JH	EP12-00036	M			
	A WASHINGTON 7/9/69			D SOUTHER 6/6/70			R.SOFKA 5-18-71				
				J SCANLAN 6/17/70			J.SCANLON 5-20-71				
NR	EP12-00006	D	TC	EP12-00023	J	GH	EP12-00037	N			
	A WASHINGTON 8/6/69			D SOUTHER 6/30/70			G.WYATT 5-28-71				
	J SCANLAN 8/20/69			D MACKLIN 7/2/70			J.SCANLAN 6-2-71				

DRN D SHEPARD	DATE 2/20/69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHKD J BISONETE	DATE 2/20/69	
ENG L GALE	DATE 2/20/69	TITLE CENTRAL PROCESSOR STATES
PROJ. ENG L GALE	DATE 2/20/69	
PROD D CALL	DATE 2/20/69	
FIRST USED ON EP12		SIZE D · CODE BS · NUMBER EP12-Ø-CPS · REV. R
SCALE		DIST.
SHEET 1 OF 1		

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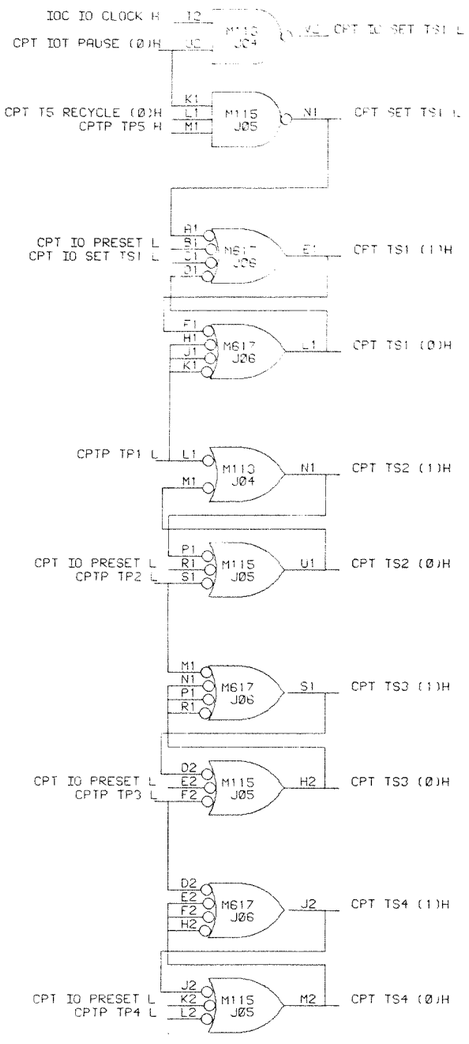

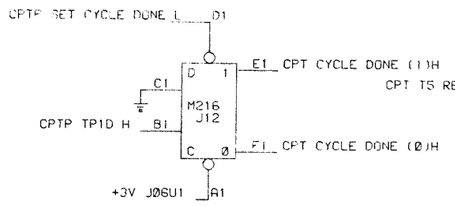

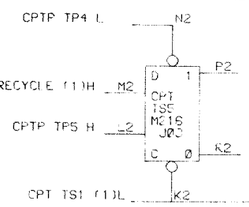

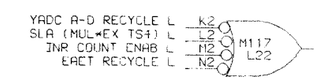

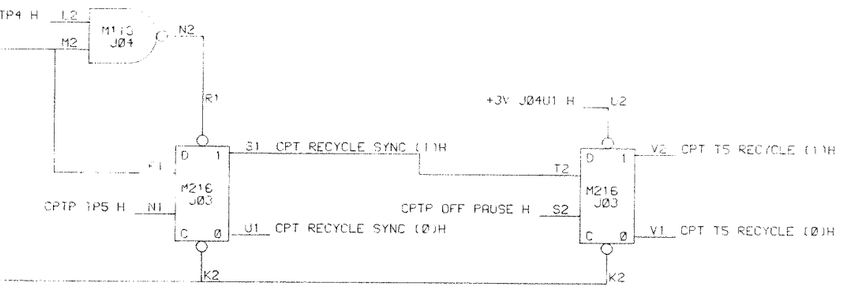

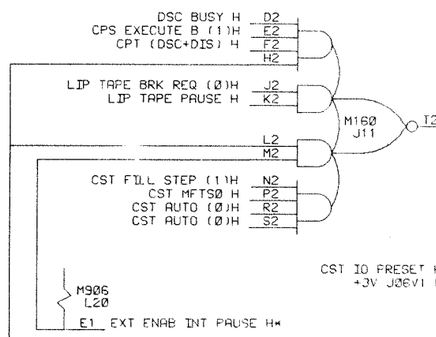

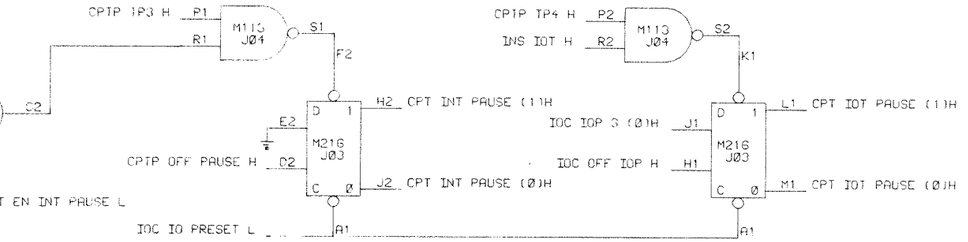

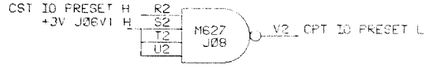

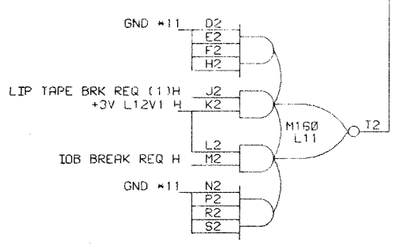

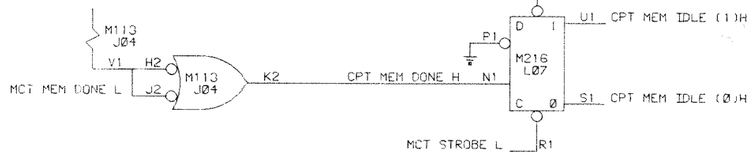

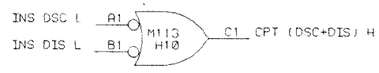

NOTE:
* THIS SIGNAL PERMITS AN I/O DEVICE TO PAUSE THE CPU IF GROUND WIRE IS REMOVED FROM N16V2. DATA BREAKS AND TAPE BREAKS ARE STILL PERMITTED.

REVISIONS			REVISIONS		
CHK	CHANGE NO.	REV.	CHK	CHANGE NO.	REV.
	EP12-00001	A	MH	EP12-00032	E
	ADS		K ROSS 11/5/69		
	J. SCANLAN 6/2/69				
	EP12-00003	B			
	A.WASHINGTON 6/17/69				
	L. GALE 6/20/69				
FV	EP12-00021	C			
	D SOUTHER 6/15/70				
	J. SCANLAN 6/17/70				
GH	EP12-00026	D			
	S GOLDSBY 9/1/70				
	D MACKLIN 9/2/70				

DRN. D. SHEPARD	DATE 2/20/69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. J.BISONETE	DATE 2/20/69	
ENG. L. GALE	DATE 2/20/69	TITLE CP TIME STATES
PROJ. ENG. L. GALE	DATE 2/20/69	
PROD. D. CHILL	DATE 2/20/69	
FIRST USED ON FP12		SIZE D CODE AS NUMBER EP12-Ø-CPT REV. E
SCALE		
SHEET 1 OF 1		DIST.

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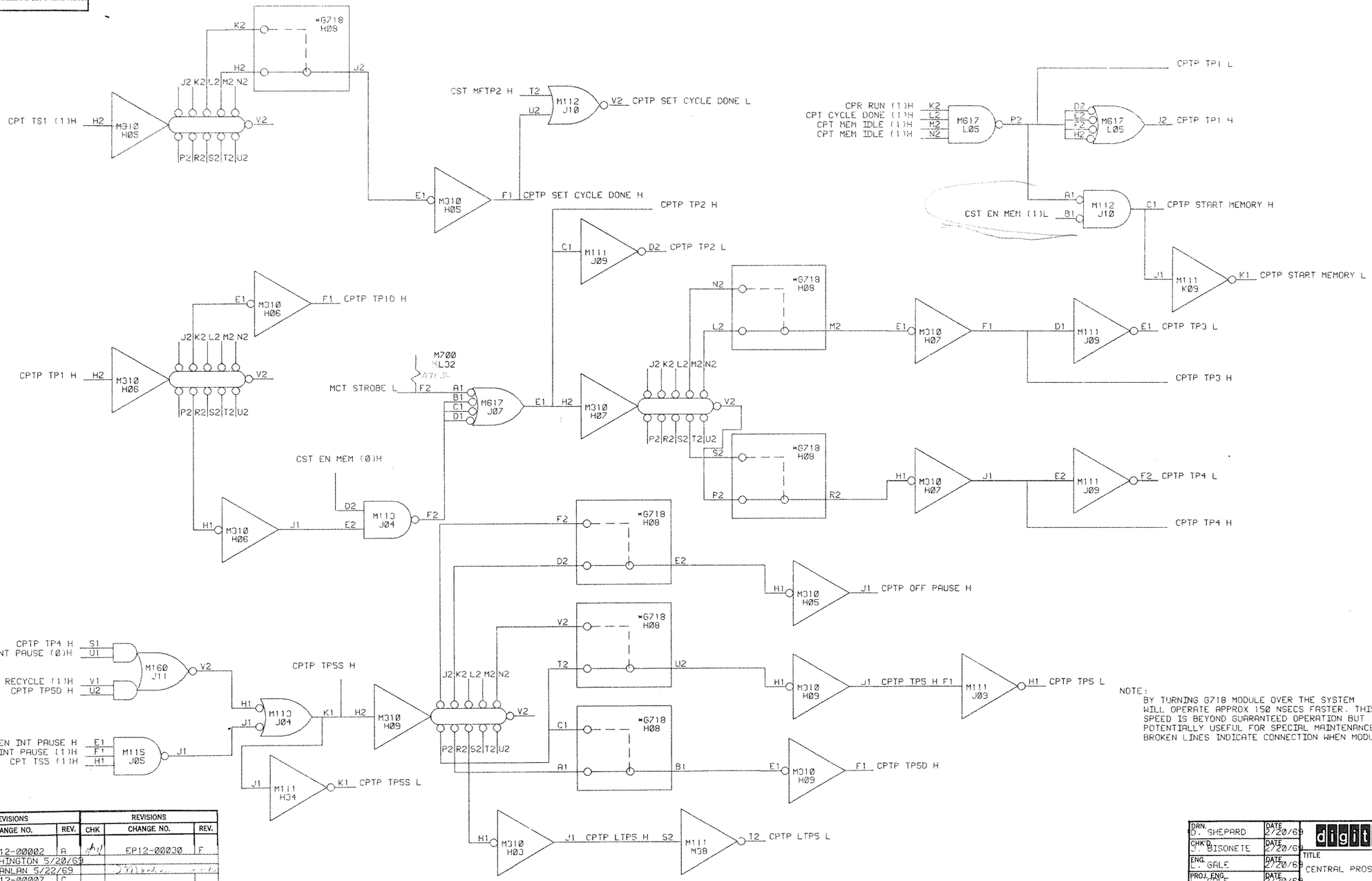

NOTE:
BY TURNING G718 MODULE OVER THE SYSTEM WILL OPERATE APPROX 150 NSECS FASTER. THIS SPEED IS BEYOND GUARANTEED OPERATION BUT POTENTIALLY USEFUL FOR SPECIAL MAINTENANCE BROKEN LINES INDICATE CONNECTION WHEN MODULE IS INVERTED.

REVISIONS			REVISIONS		
CHK	CHANGE NO.	REV.	CHK	CHANGE NO.	REV.
	EP12-00002	A		EP12-00030	F
	A.WASHINGTON 5/20/69				
	J. SCANLAN 5/22/69				
NR	EP12-00007	C			
	A.WASHINGTON 8/15/69				
	L. GALE 3/20/69				
FV	EP12-00021	D			
	D. SOUTHER 6/15/70				
	J. SCANLAN 6/17/70				
GH	EP12-00026	E			
	S. GOLDSBY 9-1-70				
	D. MACKLIN 9-2-70				

DRN. D. SHEPARD	DATE 2/20/69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D J. BISONETE	DATE 2/20/69	TITLE CENTRAL PROSESSOR TIME PULSES
ENG. L. GALE	DATE 2/20/69	
PROJ. ENG. L. GALE	DATE 2/20/69	
PROD. D. CALL	DATE 2/20/69	
FIRST USED ON EP12		SIZE D / CODE BS / NUMBER EP12-0-CPTP / REV. F
SCALE		DIST.
SHEET 1 OF 1		

This drawing and specifications, herein, are the property of Digital Equipment Corporation and shall not be reproduced or copied or used in whole or in part as the basis for the manufacture or sale of items without written permission.

CSI KEY FILL L K2
CSI KEY EXAM L L2
CSI KEY FILL STEP L M2
CSI KEY STEP EXAM L N2
M117 L39
P2
V1
M111 M40
U1 CSI (FILLS+EXAMS) L

CSI (FILLS+EXAMS) H

P2
CST MFTSØ H R2
M113 L40
S2 CSI (FILLS+EX)MFTSØ L

CSI KEY FILL STEP L L1
CSI(KEY STEP EXXMFTSØ) L M1
M113 L40
N1 CSI (KEY FS+SE) H

CST STEP EXAM (1)L L2
CST FILL STEP (1)L M2
M113 L40
N2 CSI (FILL+EX STEP) H

CSI KEY CONT L P1
CSI KEY DO L R1
M113 L40
S1 CSI KEY (DO+CONT) H E2
M111 M40
F2 CSI KEY (DO+CONT) L

CSI KEY E STOP H H1
CSI KEY F STOP H J1
M112 L38
K1 CSI KEY (E+F STOP) L

CSI KEY STOP L N1
M111 M38
P1 CSI KEY STOP H

CSI KEY ST 20 L T2
CSI KEY ST 400 L U2
CSI KEY ST LSW L V2
M115 K13
V1 CSI KEY STARTS H H2
M111 M40
J2 CSI KEY STARTS L

CSI KEY FILL L D2
CSI KEY EXAM L E2
M113 N40
F2 CSI (FILL+EXAM) H

CSI (FILLS+EX)MFTSØ L K2
M111 M38
L2 CSI (FILLS+EX)MFTSØ H

CSI KEY ST LSW L T2
CSI KEY IO PRESET L U2
M113 MØ8
V2 CSI KEYS CLEAR H

CSI KEY ST 20 L K2
M111 M40
L2 CSI KEY ST 20 H

CSI KEY F STOP L U2
M111 M38
V2 CSI KEY F STOP H

CSI KEY ST 400 L M2
M111 M40
N2 CSI KEY ST 400 H

CSI KEY DO L P2
M111 M40
R2 CSI KEY DO H

CSI KEY STEP EXAM IN L M2
M111 M38
N2 CSI KEY STEP EXAM IN H

CSI KEY FILL L A1
CSI KEY FILL STEP L B1
M113 N40
C1 CSI FILLS H

CSI KEY STEP EXAM IN L T2
CST STEP EXAM (1)L U2
M113 L40
V2
CSI KEY STEP EXAM H R1
M111 M40
S1 CSI KEY STEP EXAM L

H2
CST MFTSØ H J2
M113 N40
K2 CSI(KEY STEP EXXMFTSØ) L

G793 N33
G916 N37
M1 CSI LSW 1Ø H
L1 CSI LSW Ø9 H
K1 CSI LSW Ø8 H
J1 CSI LSW Ø7 H
H1 CSI LSW Ø6 H
F1 CSI LSW Ø5 H
E1 CSI LSW Ø4 H
D1 CSI LSW Ø3 H
C1 CSI LSW Ø2 H
B1 CSI LSW Ø1 H
A1 CSI LSW ØØ H

G793 N34
G916 N37
M2
S1
R1
P1
N1
CSI RSW Ø2 H
CSI RSW Ø1 H
CSI RSW ØØ H
CSI KEY AUTO L
CSI KEY MARK L
CSI KEY EXAM L
CSI KEY STEP EXAM IN L
CSI KEY FILL L
CSI KEY FILL STEP L
CSI IF SW 2 H
CSI IF SW 1 H
CSI IF SW Ø H
CSI LSW 11 H

G793 N35
CSI SNS Ø3 H
CSI SNS Ø2 H
CSI SNS Ø1 H
CSI SNS ØØ H
CSI RSW 11 H
CSI RSW 1Ø H
CSI RSW Ø9 H
CSI RSW Ø8 H
CSI RSW Ø7 H
CSI RSW Ø6 H
CSI RSW Ø5 H
CSI RSW Ø4 H
CSI RSW Ø3 H

G793 N36
G916 N37
U1
V1
K2
L2
CSI KEY CONT L
CSI KEY ST LSW L
CSI KEY ST 4ØØ L
CSI KEY ST 2Ø L
CSI KEY LINC L
CSI KEY STOP L
CSI KEY SS L
CSI KEY E STOP L
CSI KEY F STOP L
CSI KEY IO PRESET L
CSI KEY DO L
CSI SNS Ø5 H
CSI SNS Ø4 H

CSI KEY LINC L A1
M111 M38
B1 CSI KEY LINC H

CSI KEY AUTO L C1
M111 M38
D2 CSI KEY AUTO H

CSI (FILL+EX STEP) H S2
M111 M40
T2 CSI (FILL+EX STEP) L

CSI KEY FILL STEP L D1
M111 M38
E1 CSI KEY FILL STEP H

CSI KEY ST LSW L U2
M111 M40
V2 CSI KEY ST LSW H

CSI KEY E STOP L P2
M111 M38
R2 CSI KEY E STOP H

CSI KEY IO PRESET L J1
M111 M38
K1 CSI KEY IO PRESET H

REVISIONS		
CHK	CHANGE NO.	REV.
JB	EP12-00001	A
	ADS	
	J SCANLAN 3/13/69	
JB	EP12-00002	B
	A WASHINGTON 5/20/69	
	J SCANLAN	
NR	EP12-00007	C
	A WASHINGTON 8/20/69	
	L GALE 8/20/69	

DRN. D.SHEPARD	DATE 2/20/69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. J.BISONETE	DATE 2/20/69	
ENG. L.GALE	DATE 2/20/69	TITLE CONSOLE SWITCH INPUTS
PROJ. ENG. L.GALE	DATE 2/20/69	
PROD. D.CALL	DATE 2/20/69	
FIRST USED ON EP12		SIZE D CODE BS NUMBER EP12-Ø-CS1 REV. C
SCALE		DIST.
SHEET 1 OF 1		

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PWF RESTART L — M113 K22 — CSI KEY IO PRESET L

-SLA 2 WORD FORMAT L
CST DO (Ø) L
CPS FETCH B (Ø) L
— M115 K13 — M111 M40 — CPTP TP4 H

CST IO PRESET L → CST EN MEM M216 M39 → CST SET DO L

CST MFTP1 L, CST AUTO RESTART L — M113 L40 — CST SET KEYS H, CSI KEY DO H — M113 L40 → CST SET DO L

-CPR EN RUN L, CPTP TPS L — M112 L38 → CST DO M216 M39

CSI KEY FILL STEP H, CST STEP EXAM (Ø)H, CST SET KEYS H — M115 K13

CST KEY STEP EXAM IN H, CST SET KEYS H — M113 L40

CST FILL STEP (1) — M216 M39 — CST STEP EXAM (1)
CPTP TPSD H
CST FILL STEP (Ø) — M216 M39 — CST STEP EXAM (Ø)
CPTP TPSD H

CST MFTP1 H, CST Ø TO AC L — M113 L40 — M304 N25

POWER PROTECT G916 N37 — MCT PWR CLR L — M617 H38 — CST IO PRESET H
+3V H38U1 H — M617 H38 → CST IO PRESET L

-CSI KEY AUTO L, CST FILL STEP (Ø)L — M112 L38 — M113 K30 → CST (FILL ST+EX ST+DO) H

CSI KEY DO L, CSI KEY FILL STEP, CSI(KEY STEP EX MFTSØ) L, CSI(KEY STEP EX MFTSØ) L — M117 L39

CSI KEY STARTS L, CPR HALT L — M117 L39
CSI KEY STOP H, CST FILL STEP (Ø)H — M113 L40

CST MFTP1 H, CSI KEY AUTO H — M113 L09
CSI (FILL+EXAM) H — M112 L38 — M216 M39 — CST AUTO (1)
CPTP TPSD H — CST AUTO (Ø)
CST IO PRESET L

+3V L38U1 H — CST A ENAB M216 J29 — CST (FILL ST+EX ST+DO) H
CST MFTP1 H
+3V M34U1 H

CST AUTO RESTART L — M111 M38 — CST AUTO RESTART H

CPR RUN (Ø)L — W512 N27 — CST SET AUTO L — R303 F17 — CST AUTO DEL L — W603 N26 — PA M304 N25 → CST +5V B1

CST AUTO (1)H — M117 L39 — CST AUTO RESTART L
CSI KEY STOP H, CST STEP EXAM (Ø)H — M113 N40

CST MFTP2 H — M111 M40 — CST MFTP2 L

CSI KEY (E+F STOP) L, CSI KEY SS L — M113 N40 — CST A ENAB (Ø)H — M113 N40 — M113 N40

CST (FILL ST+EX ST+DO) H, CST (FILL ST+EX ST+DO) H — M113 N40

+3V — CST MFTS1 — CST MFTPØ H

CST MFTS 2 (1)L

CST MFTP1 H — M111 M40 — CST MFTP1 L

LIP TAPE PAUSE H, LIP PROGRESS (1)H, CSI KEY IO PRESET H — M117 L24 — CPR RUN (Ø)L — M113 K33

+3V — CST MFTS2 — CST MFTP1 H

KM2 CST MFTSØ H

CSI KEY STARTS L, CSI KEY IO PRESET L, CSI KEY (DO+CONT) L, CSI (FILLS+EXAMS) L — M117 L22 — KS2 — FILTER — ST — KP2

M700 K32 L32

PWF RESTART L — KR2 — +3V K33V1 H

KN2 — KT2 — 2 U SEC — KE2 — 2 U SEC — LD2 CST MFTP2 H

CST MFTPØ H, CST MFTP1 H

MCT PWR CLR L, CST MFTP2 L — KL2

CST MFTSØ L

JB						
	EP12-00001	A		EP12-00007	E	RIE EP12-00043 K
	ADS			A WASHINGTON 8/15/69		
	J SCANLAN 3/13/69			L GALE 8/20/69		
	EP12-00002	B		EP12-00015	F	
	A WASHINGTON 5/20/69			K COTE 10/14/69		
	J SCANLAN 5/22/69			J SCANLAN 10/17/69		
	EP12-00003	C	NR	EP12-00016	H	
	A WASHINGTON 6/17/69			K. COTE 11-12-69		
	J SCANLAN 6/20/69			J. SCANLAN 11-14-69		
	EP12-00004	D	NR	EP12-00030	J	
	A WASHINGTON 7/9/69			K WALSH 11/5/70		
	J SCANLAN 7/12/69			D MACKLIN 11/19/70		

DRN. D SHEPARD	DATE 2/20/69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
CHK'D. J BISONETE	DATE 2/20/69		
ENG. L GALE	DATE 2/20/69	TITLE CONSOLE STARTS	
PROJ. ENG. L GALE	DATE 2/20/69		
PROD. D CALL	DATE 2/20/69		
FIRST USED ON EP12		SIZE D / CODE BS / NUMBER EP12-Ø-CST / REV. K	
SCALE			
SHEET 1 OF 1		DIST.	

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PRA MA Ø0 (Ø)H A1
PRA MA Ø1 (Ø)H B1
PRB MA Ø2 (Ø)H C1
PRB MA Ø3 (Ø)H D1
PRC MA Ø4 (Ø)H D2
PRC MA Ø5 (Ø)H E2
PRD MA Ø6 (Ø)H F2
PRD MA Ø7 (Ø)H H2
M119 L03 J2
K2
M111 K09 L2
CYI MA Ø0-07 EQ Ø L
CYI MA Ø0-07 EQ Ø H

CPR 8 MODE H A1
PRE MA Ø8 (1)H B1
CPS DEFER (1)H C1
CPS INTER (1)H E1
SKH SKIP (1)H F1
CPS CA (1)H H1
IOB CA INCREMENT H J1
CPS EXECUTE B (1)H K1
INS ISZ H L1
CPS BREAK (1)H M1
FRG EN BK INCR H N1
IOB INCREMENT MB H P1
M160 L06 R1

CPS FETCH SET H N2
CST EN MEM (1)H P2
SKH SKIP (1)H R2
M115 L08 S2
CPS EXECUTE (1)H H2
INS DSC H J2
M113 K30 K2
CPS WC (1)L L2
CSI(KEY STEP EX MFTSØ) L M2
N2
M117 KØ5 P2 CYI ADD NDX

SLA EX TS4 H S1
SLA (ADA+ADD) H U1
SLA EX TS3 H V1
INC ADM H U2
M160 L11 V2
CPT TS5 B (1)H A1
INS SKP H B1
M113 L12 C1
D1
E1
M113 L12 F1

PRA CARRY OK Ø-1 L F1
PRB CARRY OK 2-3 L H1
PRC CARRY OK 4-5 L J1
PRD CARRY OK 6-7 L K1
PRE CARRY OK 8-9 L K2
PRF CARRY OK 10-11 L L2
M2
N2
M119 L03 P2 CYI CARRY OK H

SLA OPR1 H S1
PRF MB 11 (1)H U1
CPS EXECUTE (1)H V1
INS JMS H U2
M160 L06 V2

CPS INTER (1)L D2
E2
M113 L12 F2

CPS DEFER (1)H A1
SLA 2 WORD FORMAT H B1
M113 K30 C1
CPS FETCH (1)L P1
R1
S1
M115 L08 U1
-SLA INDIRECT 2 WORD H A1
CPS EXECUTE B (1)H B1
C1
M115 K29 D1

CPS EXECUTE (1)H D1
SLA (DIS+XSK) H E1
M113 K30 F1
H1
J1
M113 K30 K1
CPS DEFER B (1)H E1
INS INDEX CLASS L H F1
-INS N EQ ØØ H H1
M115 K29 J1

CPT TS2 (1)H D2
CYI PC INCREMENT H E2
M113 K30 F2
J2
K2
L2
M115 L08 M2
+3V L09U1 H
CYI XSK TEST L

CPS EXECUTE (1)H D2
INS XSK H E2
CPT TS5 (1)H F2
M115 L08 H2

CYI LINC INDEXING H
INR IR Ø7 (1)H L1
M1
M113 K30 N1
CPS WC (1)L R2
S2
T2
U2
M117 KØ5 V2 CYI T3 INDEX H
CPS EXECUTE (1)H K1
INS LAM H L1
FLK LINK (1)H M1
M115 K29 N1

PRA CARRY Ø0 H A1
B1
C1
D1
CPT TS1 (1)H E1
F1
CPS INTER (1)L D2
E2
M113 L12 F2
CPT TS4 (1)H H1
J1
M160 L11 R1 CYI CARRY INSERT L
CPT TS2 (1)H D2
CYI PC INCREMENT H E2
M113 K30 F2
J2
K2
L2
M115 L08 M2
CST EN MEM (1)H K1
L1
CPT TS3 (1)H M1
N1
P1
-PMA HALF WORD L L2
PRA CARRY Ø0 L M2
M113 H10 N2

REVISIONS		
CHK	CHANGE NO.	REV.
JB	EP12-00001	A
	ADS J.SCANLON 3-13-69	
	EP12-00008	B
	George Wyatt 5-24-71	

DRN. D.SHEPPARD	DATE 2-20-69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. J.BISSONETTE	DATE 2-20-69	
ENG. L.GALE	DATE 2-20-69	TITLE CARRY INSERT
PROJ. ENG. L.GALE	DATE 2-20-69	
PROD. M.CALL	DATE 2-20-69	
FIRST USED ON EP12		SIZE D CODE BS NUMBER EP12-Ø-CYI REV. B
SCALE		
SHEET 1 OF 1		DIST.

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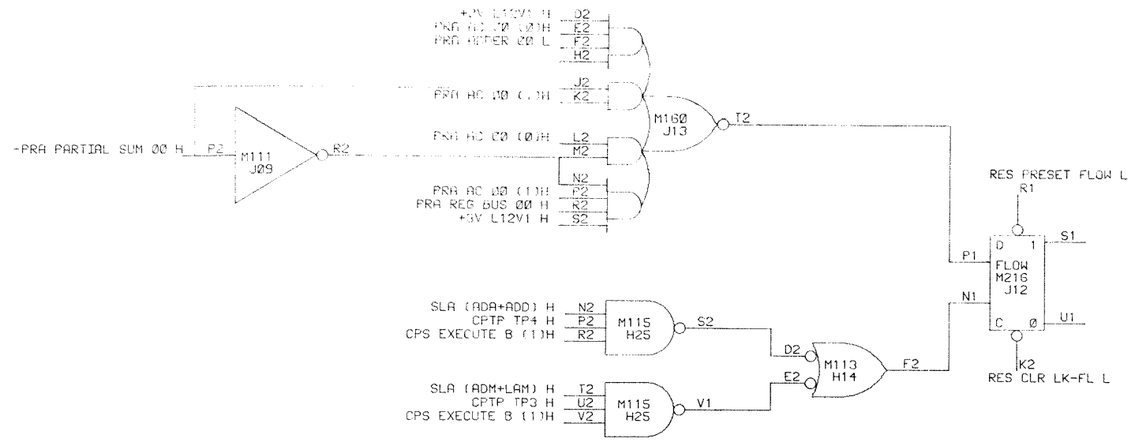

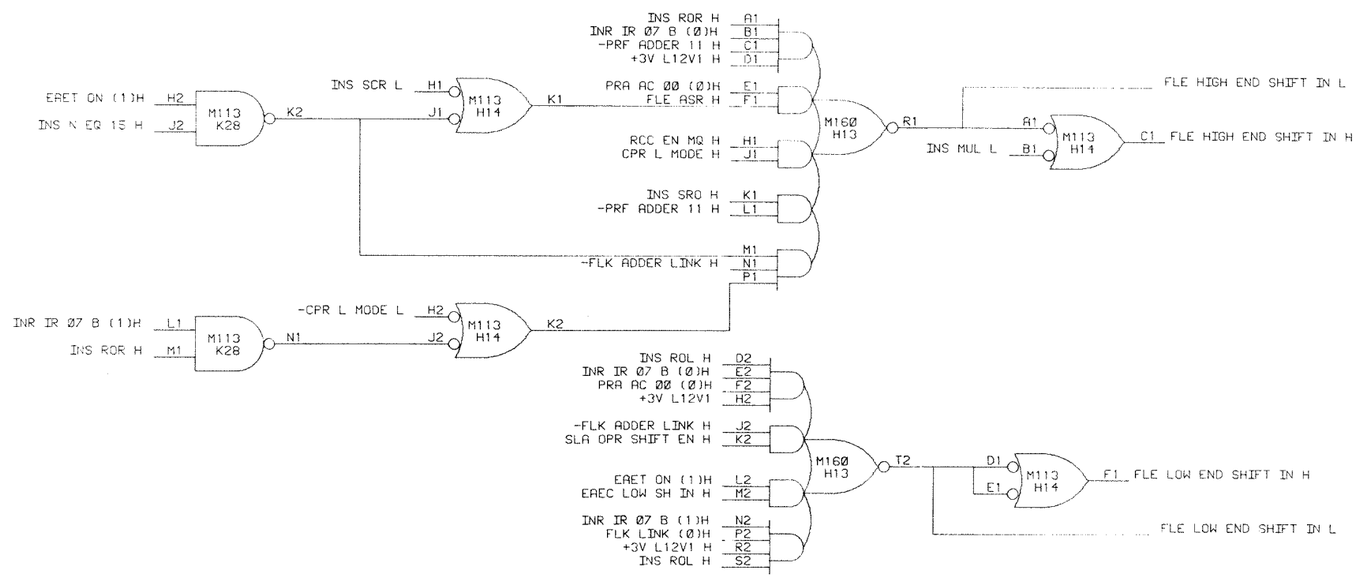

REVISIONS		
CHK	CHANGE NO.	REV.
JB	EP12-00001	A
	ADS	
	J. SCANLAN 3/13/69	
NR	EP12-00003	B
	A WASHINGTON 6/17/69	
	L GALE 6/20/69	
MN	EP12-00036	C

DRN. D. SHEPARD	DATE 2/20/69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D J. BISONETE	DATE 2/20/69	
ENG. L. GALE	DATE 2/20/69	TITLE FLOW & END SHIFT
PROJ. ENG. L. GALE	DATE 2/20/69	
PROD. D. CALL	DATE 2/20/69	
FIRST USED ON EP12		SIZE D | CODE BS | NUMBER EP12-Ø-FLE | REV. C
SCALE		
SHEET 1 OF 1		DIST.

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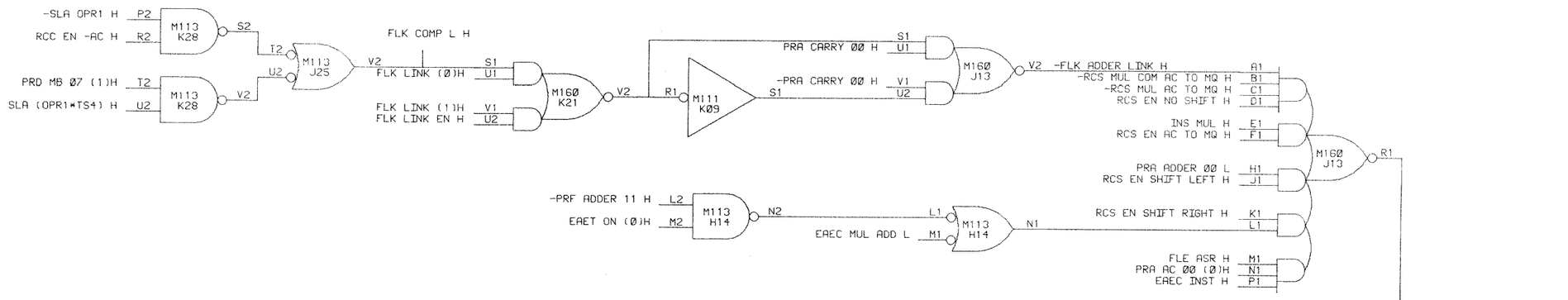

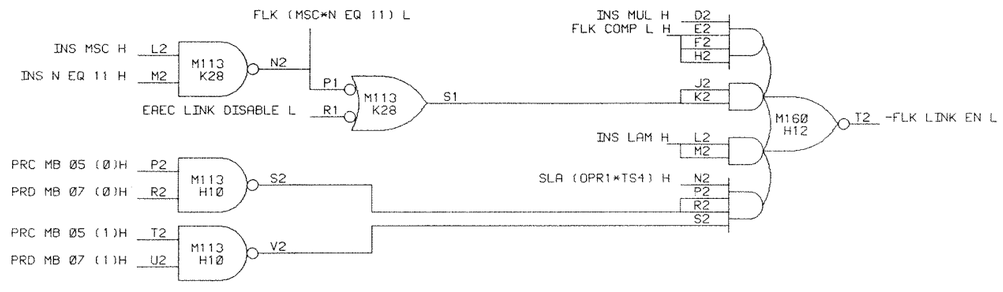

REVISIONS		
CHK	CHANGE NO.	REV.
JB	EP12-00001	A
	ADS	
	J. SCANLAN 3/13/69	
PD	EP12-00002	B
	A.WASHINGTON 6/20/69	
	J. SCANLAN 6/22/69	
GH	EP12-00003	C
	ADS	
	J SCANLAN	
	EP12-00036	D

DRN. D. SHEPARD	DATE 2/20/69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. J.BISONETE	DATE 2/20/69	
ENG. L. GALE	DATE 2/20/69	TITLE: LINK LOGIC
PROJ. ENG. L. GALE	DATE 2/20/69	
PROD. D. CALL	DATE 2/20/69	
FIRST USED ON: EP12		SIZE D · CODE 85 · NUMBER EP12-Ø-FLK · REV. D
SCALE		DIST.
SHEET 1 OF 1		

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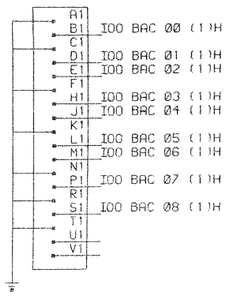
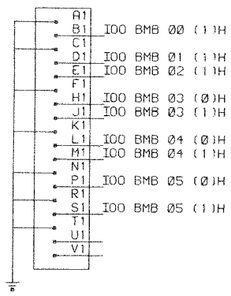
M903 N14



M903 N15



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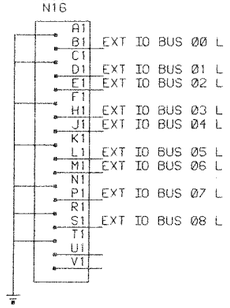

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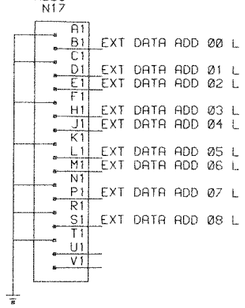

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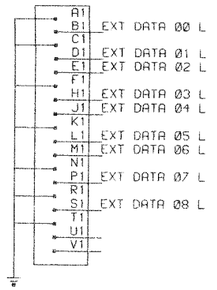

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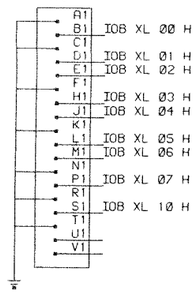

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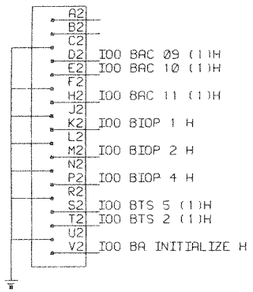

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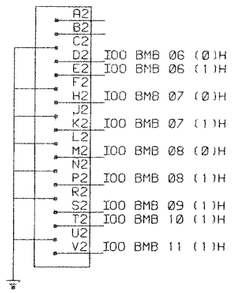

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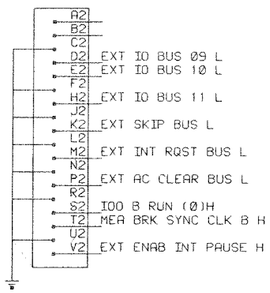

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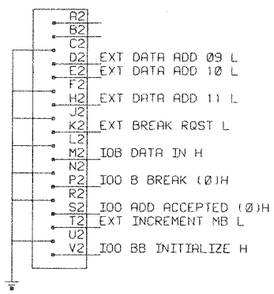

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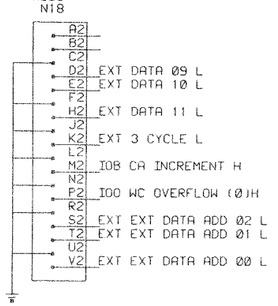

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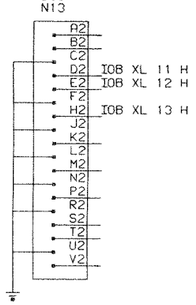
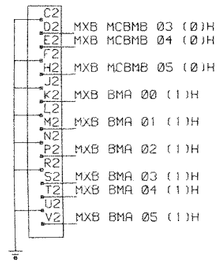


NOTE:
IF AN FPP12 IS NOT USED, ADD GROUND WIRE N16V2 TO N19T1. IF FPP12 IS ADDED TO BUS, GROUND MUST BE REMOVED.

W021 N20



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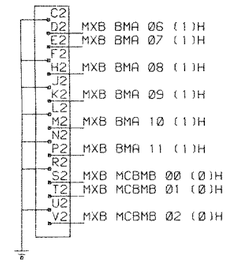

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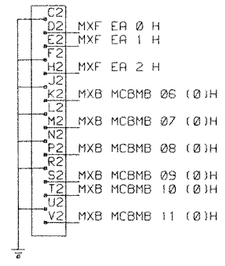
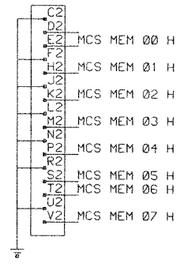
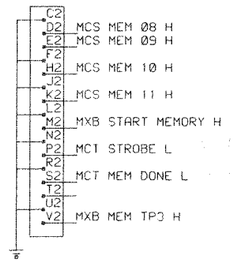


W021 N23



W021 N24 *



* PLACE A M906 CABLE TERMINATOR MODULE AT THE END OF THIS BUS WHEN USING A MM8I. ADD +5V TO THE RESPECTIVE MODULE SLOT. (A32A2 OR D32A2)

REVISIONS			REVISIONS		
CHK	CHANGE NO.	REV.	CHK	CHANGE NO.	REV.
JB	EP12-00001	A		EP12-00032	E
	ADS			K ROSS 1/15/71	
	J SCANLAN 1/13/69			J SCANLAN 1/17/71	
PD	EP12-00002	B	MN	EP12-00034	F
	A WASHINGTON 5/20/69			K Ross 2/23/71	
	J SCANLAN 5/22/69			J Scanlan 2/24/71	
FV	EP12-00021	C	SM	EP12-00046	H
	D SOUTHER 6/15/70			Withdrawn 5/1/72	
	J SCANLAN 6/17/70			IKNAIAN	
GH	EP12-00026	D		(illegible)	
	S GOLDSBY 9/1/70				
	D MACKLIN 9/2/70				

DRN. D SHEPARD	DATE 2/20/69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D J BISONETE	DATE 2/20/69	
ENG. L GALE	DATE 2/20/69	TITLE IO & EXT MEM CABLES
PROJ. ENG. L GALE	DATE 2/20/69	
PROD. D CALL	DATE 2/20/69	
FIRST USED ON EP12		SIZE D CODE BS NUMBER EP12-0-ICB REV. H
SCALE		DIST.
SHEET 1 OF 1		

2/24/71

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PRA REG BUS Ø0 H
PRA REG BUS Ø1 H
PRB REG BUS Ø2 H
PRB REG BUS Ø3 H
PRC REG BUS Ø4 H
PRC REG BUS Ø5 H
PRD REG BUS Ø6 H
PRD REG BUS Ø7 H
+3V H36V1 H
+3V H36U1 H
IOR IO PRESET L

IR Ø0 M216 H39
IR Ø1 M216 H39
IR Ø2 M216 H39
IR Ø3 M216 H39
IR Ø4 M216 H39
IR Ø5 M216 H39
IR Ø6 M216 H40
IR Ø7 M216 H40
IR Ø8 M216 H40
IR Ø9 M216 H40
IR 10 M216 H40
IR 11 M216 H40

M617 H38 — E1 INR IR Ø7 B (Ø)H
M617 H38 — J2 INR IR Ø7 B (1)H

M617 H38 — CPTP TP2 H, CPS DEFER (Ø)H, CPS EXECUTE (Ø)H, CPS EXC 2 (Ø)H → P2 INR CLEAR IR L
M617 H38 — L1 INR LOAD IR Ø-7 H
INR LOAD IR 8-11 H

M113 H36 — CPS FETCH B (1)H, R2 → S2
M113 H36 — CPTP TP3 H, SLA (MUL+EXECUTE) H → K2
M115 H31 — D1
M117 H35 — CPTP TP5D H, -INS SAM H, CPT RECYCLE SYNC (1)H, CPR L MODE H → E1

INS N EQ ØØ H
INR COUNT ENAB H, INR IR Ø8 (1)H, -INS N EQ 10 H
PRE REG BUS Ø8 H, INR (FETCH*TS3) H
M113 H36 — F2
M115 H37 — S2, S1, M2
PRE REG BUS Ø9 H
INR IR Ø9 (1)H, INR COUNT ENAB H
INR IR Ø9 (Ø)H
INR CARRY 10 L
M111 H34 — INR CARRY 10 L
M115 H37 — U1, V1, N1

INR IR 10 (Ø)H, INR IR 11 (Ø)H
INR CARRY 10 L
INR COUNT ENAB H, INR IR 10 (1)H, INR IR 11 (1)H
PRF REG BUS 10 H
M115 H37 — H2, J1, D1
M113 H36 — N2
INR (FETCH*TS3) H, PRF REG BUS 11 H, INR COUNT ENAB H, INR IR 11 (Ø)H
M113 H36 — N1, F1, C1

SLA L ROTATES H, -INS N EQ ØØ H, SLA MUL GO H, -INS N EQ Ø1 H
M121 H33 — E1, D1
M111 H34 — E1 INR COUNT ENAB H
INR COUNT ENAB L

CPS FETCH (1)L, CPT TS3 (1)L
M112 H32 — C1 INR (FETCH*TS3) H

REVISIONS		
CHK	CHANGE NO.	REV.
JB	EP12-00001	A
	ADS	
	J SCANLAN 3-13-69	
GB	EP12-00003	B
	B KORTELING 6-17-69	
	L. GALE 6-20-69	
RC	EP12-00023	C
	Robert Scanlan 6-30-69	
	R Mitchell 7-2-69	

DRN.	DATE	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. R. MITCHELL	DATE 2-20-69	
ENG. L. GALE	DATE 2-27-69	TITLE: INSTRUCTION REGISTER
PROJ. ENG. L. GALE	DATE 2-20-69	
PROD. W. CALI	DATE 2-20-69	
FIRST USED ON: EP12		SIZE D · CODE BS · NUMBER EP12-Ø-INR · REV. C
SCALE		
SHEET 1 OF 1		DIST.

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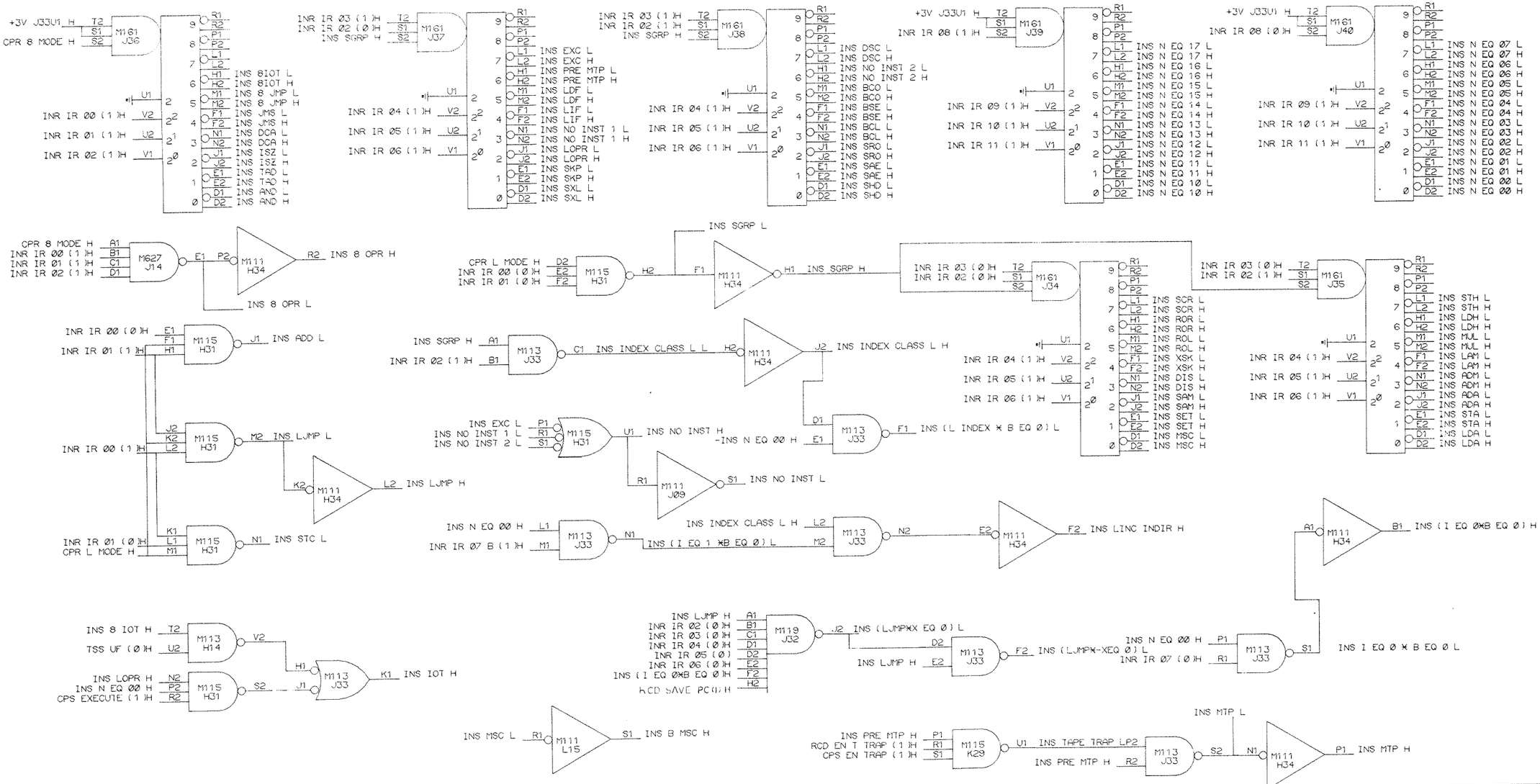

REVISIONS			REVISIONS		
CHK	CHANGE NO	REV	CHK	CHANGE NO.	REV.
NR	EP12-00001	A	NR	EP12-00030	E
	ADS			K WALSH 11/5/70	
	J SCANLAN 3/13/69			D MACKLIN 11/13/70	
NR	EP12-00007	B	ZSE	EP12-00043	F
	ADS			J Marlan	
	L GALE 8/20/69			Russell Thomas 11-22-71	
NR	EP12-00016	C	RE	EP12-[illegible]	H
	K. COTE 11-12-69			H [illegible]	
	J. SCANLAN 11-14-69			R MCCUE	
FV	EP12-00021	D		K Mc[illegible]	
	D. SOUTHER 6-15-70				
	J SCANLAN 6-17-70				

DRN D SHEPARD	DATE 2/20/69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
CHK'D J BISONETE	DATE 2/20/69		
ENG. L GALE	DATE 2/20/69	TITLE INSTRUCTIONS	
PROJ. ENG. L GALE	DATE 2/20/69		
PROD. D CALL	DATE 2/20/69		
FIRST USED ON EP12		SIZE D	CODE BS
SCALE		NUMBER EP12-Ø-INS	REV. H
SHEET 1 OF 1		DIST.	

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EXT DATA Ø0 L — M9Ø6 L16 B1 A1 — M111 L14 — B1 IOA DATA Ø0 H

EXT DATA Ø1 L — M9Ø6 L16 D1 C1 — M111 L14 — D2 IOA DATA Ø1 H

EXT DATA Ø2 L — M9Ø6 L16 E1 D1 — M111 L14 — E1 IOA DATA Ø2 H

EXT DATA Ø3 L — M9Ø6 L16 H1 E2 — M111 L14 — F2 IOA DATA Ø3 H

EXT DATA Ø4 L — M9Ø6 L16 J1 F1 — M111 L14 — H1 IOA DATA Ø4 H

EXT DATA Ø5 L — M9Ø6 L16 L1 H2 — M111 L14 — J2 IOA DATA Ø5 H

EXT DATA Ø6 L — M9Ø6 L16 M1 J1 — M111 L14 — K1 IOA DATA Ø6 H

EXT DATA Ø7 L — M9Ø6 L16 P1 K2 — M111 L14 — L2 IOA DATA Ø7 H

EXT DATA Ø8 L — M9Ø6 L16 S1 L1 — M111 L14 — M1 IOA DATA Ø8 H

EXT DATA Ø9 L — M9Ø6 L16 D2 M2 — M111 L14 — N2 IOA DATA Ø9 H

EXT DATA 1Ø L — M9Ø6 L16 E2 N1 — M111 L14 — P1 IOA DATA 1Ø H

EXT DATA 11 L — M9Ø6 L16 H2 P2 — M111 L14 — R2 IOA DATA 11 H

EXT DATA ADD Ø0 L — M9Ø6 L16 K2 R1 — M111 L14 — S1 IOA DATA ADD Ø0 H

EXT DATA ADD Ø1 L — M9Ø6 L16 M2 S2 — M111 L14 — T2 IOA DATA ADD Ø1 H

EXT DATA ADD Ø2 L — M9Ø6 L16 P2 V1 — M111 L14 — U1 IOA DATA ADD Ø2 H

EXT DATA ADD Ø3 L — M9Ø6 L16 S2 U2 — M111 L14 — V2 IOA DATA ADD Ø3 H

EXT DATA ADD Ø4 L — M9Ø6 L16 T2 A1 — M111 L15 — B1 IOA DATA ADD Ø4 H

EXT DATA ADD Ø5 L — M9Ø6 L16 V2 C1 — M111 L15 — D2 IOA DATA ADD Ø5 H

EXT DATA ADD Ø6 L — M9Ø6 L17 B1 D1 — M111 L15 — E1 IOA DATA ADD Ø6 H

EXT DATA ADD Ø7 L — M9Ø6 L17 D1 E2 — M111 L15 — F2 IOA DATA ADD Ø7 H

EXT DATA ADD Ø8 L — M9Ø6 L17 E1 F1 — M111 L15 — H1 IOA DATA ADD Ø8 H

EXT DATA ADD Ø9 L — M9Ø6 L17 H1 H2 — M111 L15 — J2 IOA DATA ADD Ø9 H

EXT DATA ADD 1Ø L — M9Ø6 L17 J1 J1 — M111 L15 — K1 IOA DATA ADD 1Ø H

EXT DATA ADD 11 L — M9Ø6 L17 L1 K2 — M111 L15 — L2 IOA DATA ADD 11 H

EXT IO BUS Ø0 L — A1
INT IO BUS Ø0 L — B1
+3V L24V1 H — D1
M516 M17 — E1 IOA IO BUS Ø0 H

EXT IO BUS Ø1 L — F1
INT IO BUS Ø1 L — H1
+3V L24V1 H — K1
M516 M17 — L1 IOA IO BUS Ø1 H

EXT IO BUS Ø2 L — M1
INT IO BUS Ø2 L — N1
+3V L24V1 H — R1
M516 M17 — S1 IOA IO BUS Ø2 H

EXT IO BUS Ø3 L — D2
INT IO BUS Ø3 L — F2
+3V L24V1 H — H2
M516 M17 — J2 IOA IO BUS Ø3 H

EXT IO BUS Ø4 L — K2
INT IO BUS Ø4 L — L2
TTI TTØ L — M2
DTTI TTØ L — N2
M516 M17 — P2 IOA IO BUS Ø4 H

EXT IO BUS Ø5 L — R2
INT IO BUS Ø5 L — S2
TTI TT1 L — T2
DTTI TT1 L — U2
M516 M17 — V2 IOA IO BUS Ø5 H

EXT IO BUS Ø6 L — A1
INT IO BUS Ø6 L — B1
TTI TT2 L — C1
DTTI TT2 L — D1
M516 M18 — E1 IOA IO BUS Ø6 H

EXT IO BUS Ø7 L — F1
INT IO BUS Ø7 L — H1
TTI TT3 L — J1
DTTI TT3 L — K1
M516 M18 — L1 IOA IO BUS Ø7 H

EXT IO BUS Ø8 L — M1
INT IO BUS Ø8 L — N1
TTI TT4 L — P1
DTTI TT4 L — R1
M516 M18 — S1 IOA IO BUS Ø8 H

EXT IO BUS Ø9 L — D2
INT IO BUS Ø9 L — E2
TTI TT5 L — F2
DTTI TT5 L — H2
M516 M18 — J2 IOA IO BUS Ø9 H

EXT IO BUS 1Ø L — K2
INT IO BUS 1Ø L — L2
TTI TT6 L — M2
DTTI TT6 L — N2
M516 M18 — P2 IOA IO BUS 1Ø H

EXT IO BUS 11 L — R2
INT IO BUS 11 L — S2
TTI TT7 L — T2
DTTI TT7 L — U2
M516 M18 — V2 IOA IO BUS 11 H

NOTE:

ALL SIGNALS STARTING WITH 'EXT' COME FROM THE EXTERNAL IO BUS. THE CABLES ARE SHOWN ON DRAWING ICB. SEE DRAWING IOB FOR DESCRIPTION OF M516 INPUTS.

REVISIONS		
CHK	CHANGE NO.	REV.

DRN.	DATE
CHK'D.	DATE
ENG.	DATE
PROJ. ENG.	DATE
PROD.	DATE
FIRST USED ON	EP12
SCALE	
SHEET 1 OF 1	

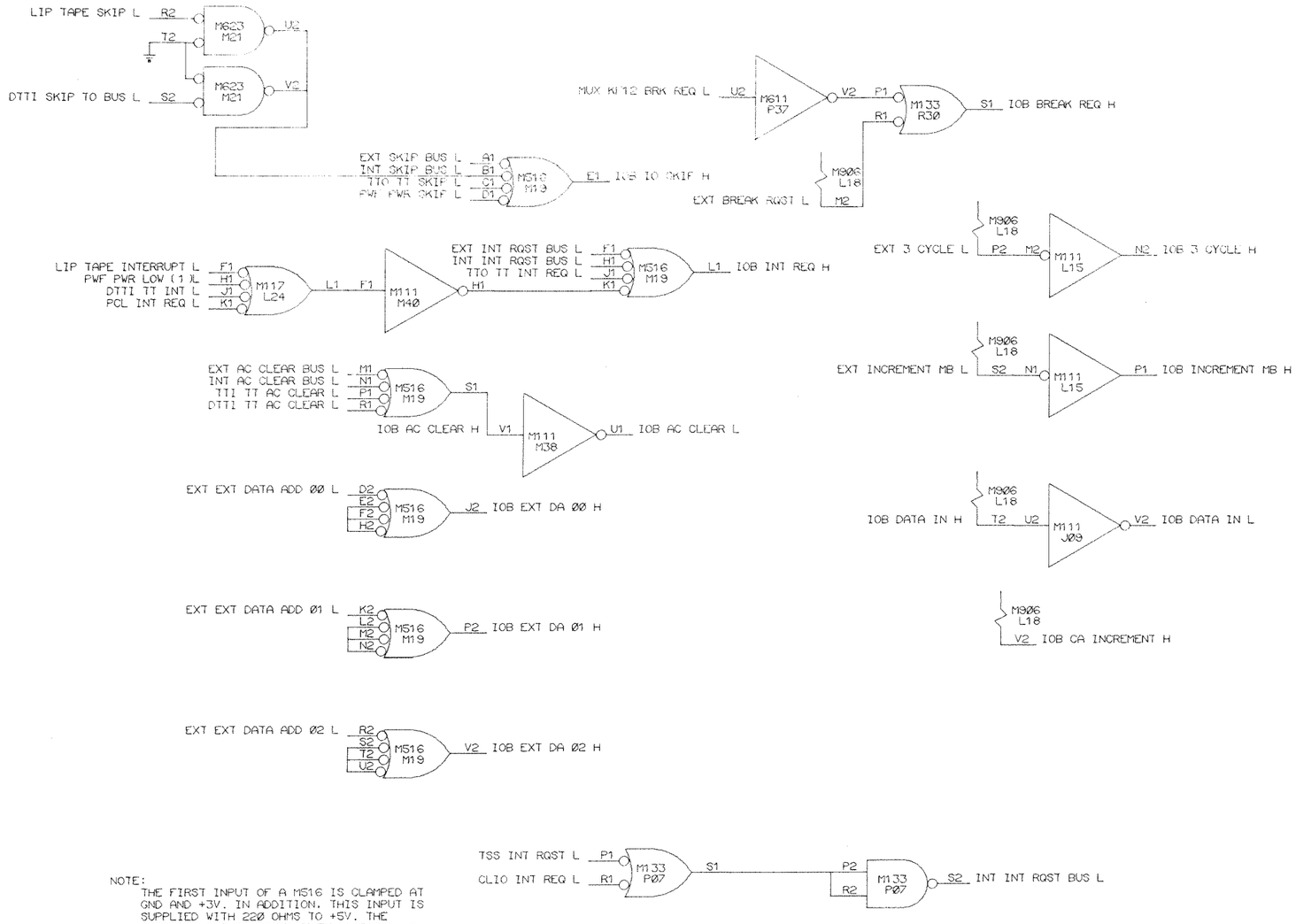
digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: IO INPUT PART A

SIZE	CODE	NUMBER	REV.
D	BS	EP12-Ø-IOA	A

DIST.

REV B SHOWS PULL-UPS FROM L20 ON DTTI INPUTS.



NOTE:
THE FIRST INPUT OF A M516 IS CLAMPED AT GND AND +3V. IN ADDITION, THIS INPUT IS SUPPLIED WITH 220 OHMS TO +5V. THE SECOND INPUT IS EFFECTIVELY A 500 OHMS TO 3.3V. BOTH THE FIRST AND SECOND INPUTS ARE USED FOR COLLECTOR ORED BUS INPUTS THIRD AND FORTH M516 INPUTS ARE STD TTL GATE INPUTS.

NOTE:
ALL SIGNALS PREFIXED WITH 'EXT' AS WELL AS IOB DATA IN, IOB CA INCREMENT, AND THE IOB XL SIGNALS COME FROM THE EXTERNAL IO BUS. THE CABLE CONNECTIONS ARE SHOWN ON DRAWING ICB.

REVISIONS			REVISIONS		
CHK	CHANGE NO.	REV.	CHK	CHANGE NO.	REV.
JB	EP12-00001	A	GH	EP12-00036	E
	ADS			R SOFKA 5-6-71	
	J SCANLAN 3/13/69			J SCANLAN 5-20-71	
	EP12-00016	B		EP12-00044	F
	K.COTE 11/12/69				
	J.SCANLAN 11/14/69				
GH	EP12-00023	C			
	D. SOUTHER 6-30-70				
	D. MACKLIN 7-2-70				
GH	EP12-00030	D			
	K WALSH 11/5/70				
	D MACKLIN 11/19/70				

DRN. D SHEPARD	DATE 2/20/69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. J BISONETE	DATE 2/20/69	
ENG. L GALE	DATE 2/20/69	TITLE IO INPUT PART B
PROJ. ENG. L GALE	DATE 2/20/69	
PROD. D CALL	DATE 2/20/69	
FIRST USED ON EP12		SIZE D | CODE BS | NUMBER EP12-0-10B | REV. F
SCALE		DIST.
SHEET 1 OF 1		

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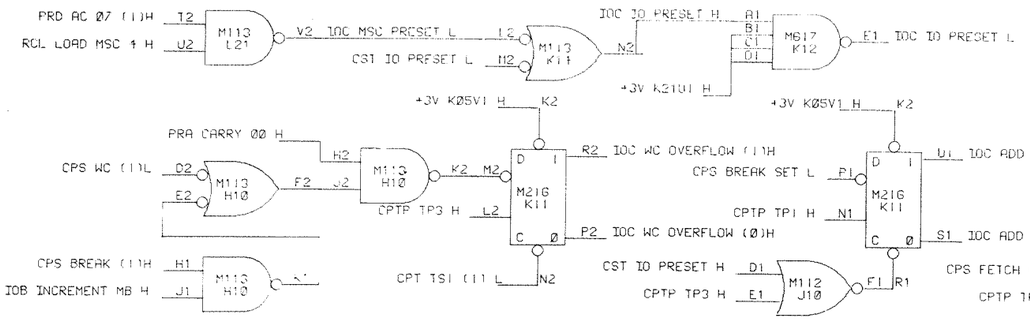

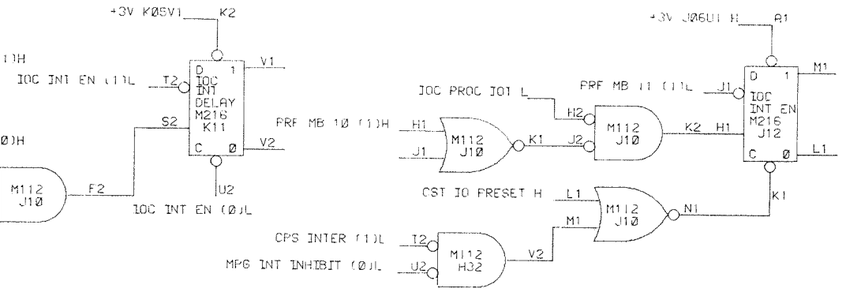

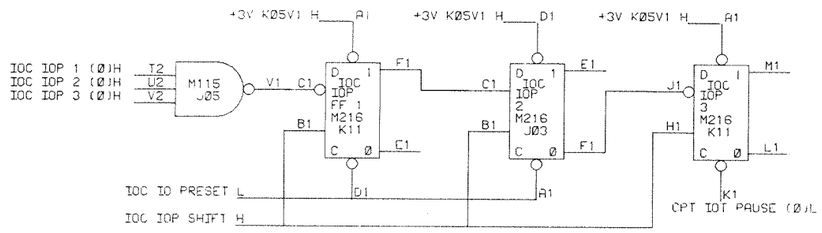

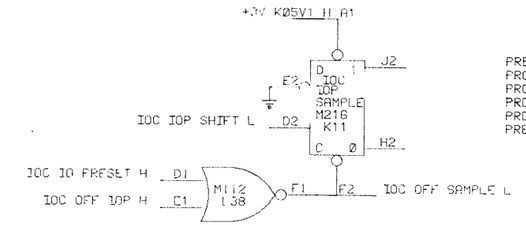

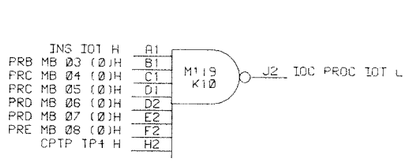

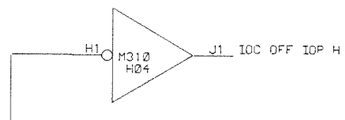

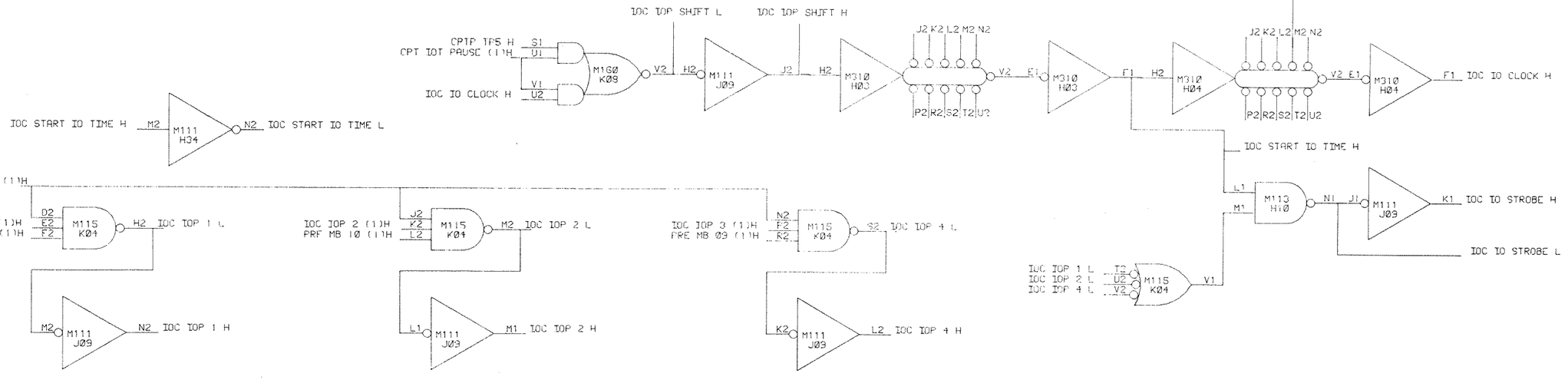

REVISIONS			REVISIONS		
CHK	CHANGE NO.	REV.	CHK	CHANGE NO.	REV.
JB	EP12-00001	A	GH	EP12-00026	E
	ADS			S. GOLDSBY 9-1-70	
	J. SCANLAN 3/13/69			D. MACKLIN 9-2-70	
PD	EP12-00002	B	JF	EP12-00030	F
	A.WASHINGTON 5/20/69			R.SOFKA 11-17-70	
	J. SCANLAN 5/22/69			D.MACKLIN 11-19-70	
NR	EP12-00013	C	MA	EP12-00039	H
	D. SOUTHER 10/1/69			George Wyatt 6-2-71	
	J. SCANLAN 10/6/69				
FV	EP12-00021	D			
	D. SOUTHER 6/15/70				
	J. SCANLAN 6/17/70				

DRN. D SHEPARD	DATE 2/20/69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. J. BISONETE	DATE 2/20/69	
ENG. L. GALE	DATE 2/20/69	TITLE IO CONTROL & TIMING
PROJ. ENG. L. GALE	DATE 2/20/69	
PROD. D. CALL	DATE 2/20/69	
FIRST USED ON EP12		SIZE D / CODE 85 / NUMBER EP12-Ø-IOC / REV. H
SCALE		DIST.
SHEET 1 OF 1		

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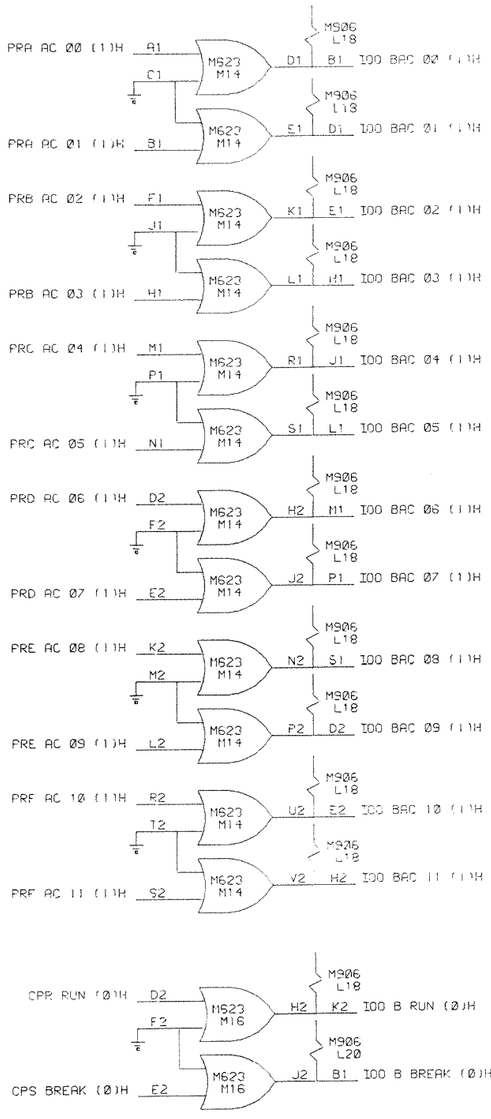

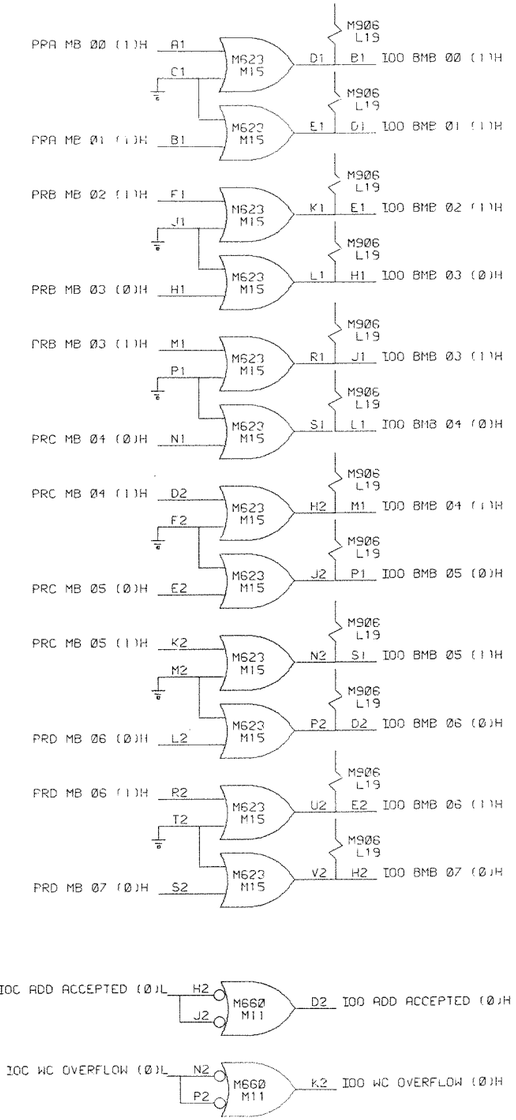

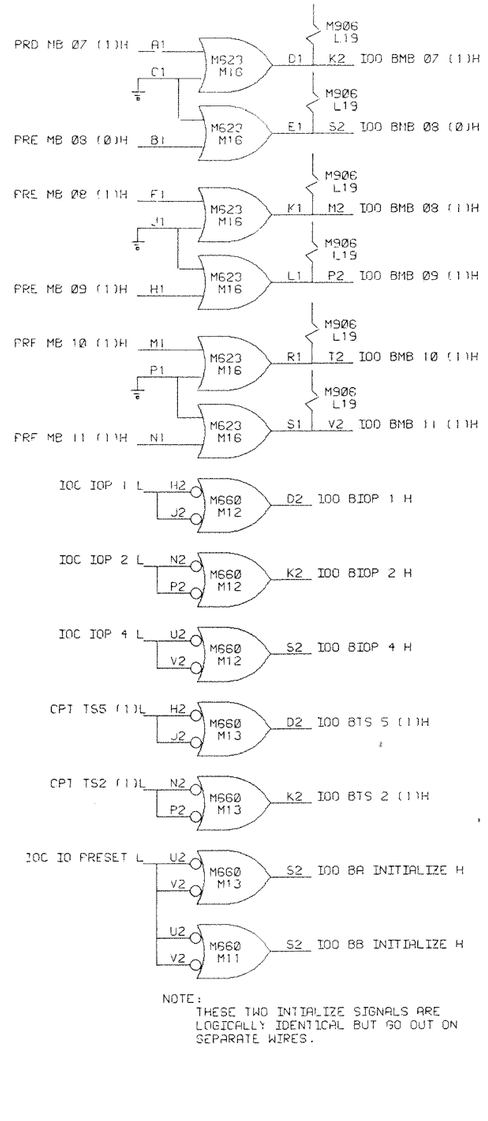

NOTE:
THESE TWO INITIALIZE SIGNALS ARE LOGICALLY IDENTICAL BUT GO OUT ON SEPARATE WIRES.

REVISIONS		
CHK	CHANGE NO.	REV.
	EP12-ØØØØ2	A

DRN.		DATE
CHK'D.		DATE
ENG.		DATE
PROJ. ENG.		DATE
PROD.		DATE
FIRST USED ON	EP12	
SCALE		
SHEET 1 OF 1		

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: IO OUTPUT BUFFERS

SIZE	CODE	NUMBER	REV.
D	BS	EP12-Ø-1ØØ	A

DIST.

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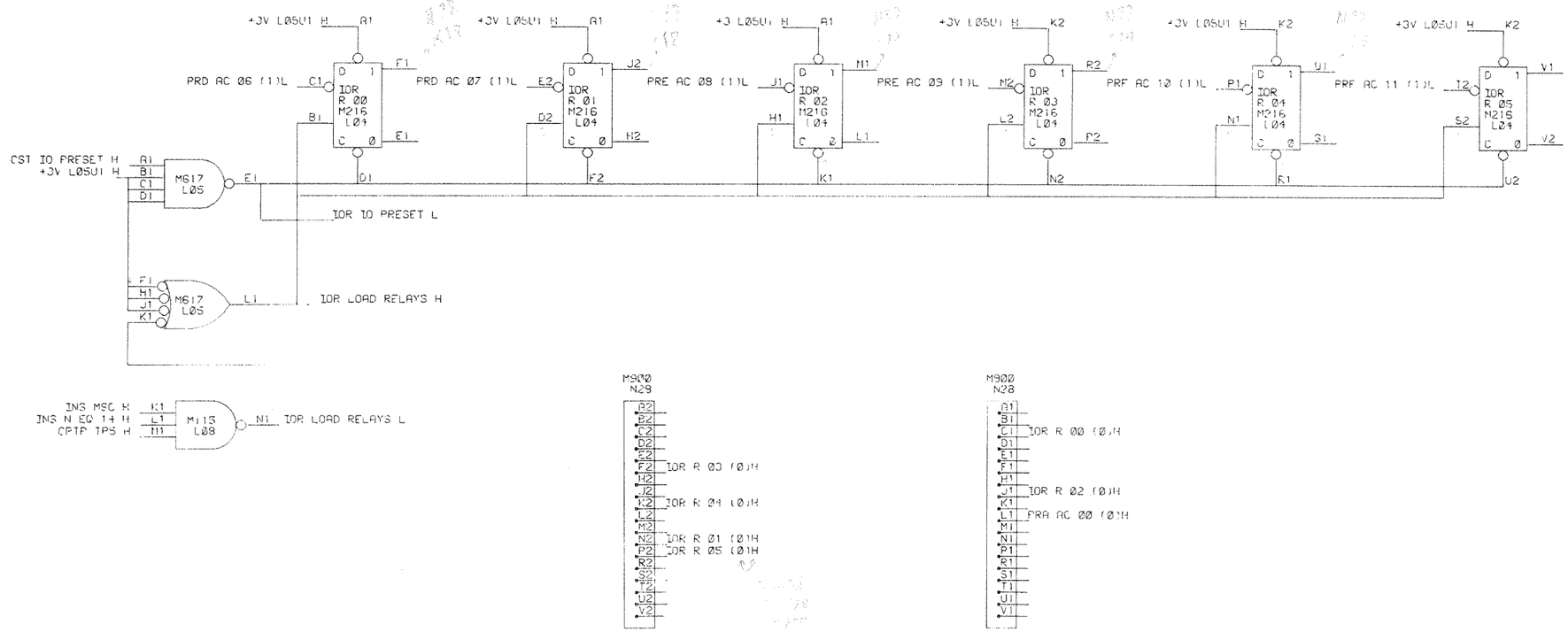

REVISIONS		
CHK	CHANGE NO.	REV.
	EP12-00001	A
	ADS	
	J.SCANLAN 6-2-69	
	EP12-00003	B

DRN. D.L. SHEPARD	DATE 2-20-69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. V.BISONETE	DATE 2-20-69	
ENG. L. GALE	DATE 2-20-69	TITLE: RELAY BUFFER
PROJ. ENG. L. GALE	DATE 2-20-69	
PROD. D. CALL	DATE 2-20-69	
FIRST USED ON: EP12		SIZE D | CODE BS | NUMBER EP12-0-IOR | REV. B
SCALE		DIST.
SHEET 1 OF 1		

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M901 H01

A1	LIP PROGRESS (1)H
B1	LTR WRITE ON L
C1	LIP TAPE PAUSE H
D1	LIP TAPE BRK REQ (0)H
E1	LIP TAPE INTERRUPT L
F1	LIP MSC TAC TO AC H
H1	LTP8 BLOCK (1)H
J1	LTP8 TAPE WORD H
K1	LIP TAPE BRK REQ (1)H
L1	LCS TURN ARND (1)H
M1	LIP PROGRESS (0)H
N1	LIP TAPE OUT H
P1	LTR MARK ON L
R1	LWN IM H
S1	LIP CHK SUM TO AC L
T1	GD
U1	LIP CHK SUM LD AC L
V1	GND

M903 J01

B1	MCS MEM 00 H
D1	MCS MEM 01 H
E1	MCS MEM 02 H
H1	MCS MEM 03 H
J1	MCS MEM 04 H
L1	MCS MEM 05 H
M1	MCS MEM 06 H
P1	MCS MEM 07 H
S1	MCS MEM 08 H

M903 K01

B1	PRB MB 00 (0)H
D1	PRB MB 01 (1)H
E1	PRC MB 04 (0)H
H1	PRC MB 04 (1)H
J1	PRC MB 05 (0)H
L1	PRC MB 05 (1)H
M1	PRC MB 06 (0)H
P1	PRC MB 06 (1)H
S1	PRD MB 07 (0)H

M903 L01

B1	PRA MA 00 (0)H
D1	PRA MA 00 (1)H
E1	PRA MA 01 (1)H
H1	PRB MA 02 (1)H
J1	PRB MA 03 (0)H
L1	PRB MA 03 (1)H
M1	PRC MA 04 (1)H
P1	PRC MA 05 (1)H
S1	PRD MA 06 (0)H

M903 H02

B1	INT IO BUS 00 L
D1	INT IO BUS 01 L
E1	INT IO BUS 02 L
H1	INT IO BUS 03 L
J1	INT IO BUS 04 L
L1	INT IO BUS 05 L
M1	INT IO BUS 06 L
P1	INT IO BUS 07 L
S1	INT IO BUS 08 L

M901 M02

A1	PWF POWER LOW (0)H
B1	DST SET AUTO L
C1	PRD AC 07 (0)H
D1	PRE AC 08 (0)H
E1	PRE AC 09 (0)H
F1	OPT T5 RECYCLE (0)H
H1	DST AUTO DEL L
L1	INR IR 07 (0)H
K1	INR IR 07 B (1)H
L1	INR IR 09 (1)H
M1	INR IR 10 (1)H
N1	INR IR 11 (1)H
P1	INS N EQ 01 H
R1	INS N EQ 03 H
S1	DST D0 (1)H
T1	GND
U1	DSC SIZE (0)H
V1	PWF RESTART L

M901 H01

A2	+5V
B2	SLA EX TS4 H
C2	GND
D2	LTRA TAPE BUS 00 H
E2	LTRA TAPE BUS 01 H
F2	LTRB TAPE BUS 02 H
H2	LTRB TAPE BUS 03 H
J2	LTRC TAPE BUS 04 H
K2	LTRC TAPE BUS 05 H
L2	LTRD TAPE BUS 06 H
M2	LTRD TAPE BUS 07 H
N2	LTRE TAPE BUS 08 H
P2	LTRE TAPE BUS 09 H
R2	LTRF TAPE BUS 10 H
S2	LTRF TAPE BUS 11 H
T2	LIP TAPE BUS TO AC L
U2	
V2	LIP TAPE SKIP L

M903 J01

D2	MCS MEM 09 H
E2	MCS MEM 10 H
H2	MCS MEM 11 H
K2	PRA MB 00 (0)H
M2	PRA MB 00 (1)H
P2	PRA MB 01 (0)H
S2	PRA MB 01 (1)H
T2	PRB MB 02 (0)H
V2	PRB MB 02 (1)H

M903 K01

D2	PRD MB 07 (1)H
E2	PRE MB 08 (0)H
H2	PRE MB 08 (1)H
K2	PRE MB 09 (0)H
M2	PRE MB 09 (1)H
P2	PRF MB 10 (0)H
S2	PRF MB 10 (1)H
T2	PRF MB 11 (0)H
V2	PRF MB 11 (1)H

M903 L01

D2	PRD MA 06 (1)H
E2	PRD MA 07 (1)H
H2	PRE MA 08 (1)H
K2	PRE MA 09 (0)H
M2	PRE MA 09 (1)H
P2	PRF MA 10 (1)H
S2	PRF MA 11 (1)H
T2	MCT STROBE L
V2	MCT MEM DONE L

M903 H02

D2	INT IO BUS 09 L
E2	INT IO BUS 10 L
H2	INT IO BUS 11 L
K2	INT SKIP BUS L
M2	INT AC CLEAR BUS L
P2	DSC Z DRIVER H
S2	MXF EA 2 H
T2	IOC IO STROBE H
V2	INS SAM H

M901 M02

A2	CLIO INT RQST L
B2	DSC 50J INTEN L
C2	GND
D2	LCS IDLE (1)L
E2	LCS SEARCH (1)L
F2	LCS BLOCK (1)L
H2	LCX NO PAUSE (1)L
J2	LCX EX ADD FORMAT (1)L
K2	LCS CHK WRD (1)L
L2	MCT PWR STOP L
M2	LIN TINR 11 (1)L
N2	LIN TINR 10 (1)L
P2	LIN TINR 09 (1)L
R2	LCX MARK (1)L
S2	INS MTP H
T2	INS 8 MSC H
U2	CS1 KEY MARK L
V2	LIP TAPE WORD (1)H

M903 J02

B1	CPTP START MEMORY H
D1	IOC IO PRESET L
E1	CPTP TP2 H
H1	CPTP TP5D H
J1	CPTP TP4 H
L1	CPTP TP5 H
M1	IOC IOP 1 L
P1	IOC IOP 2 L
S1	IOC IOP 4 L

* USE M906 IF SYSTEM DOES NOT HAVE TAPES.

M903 J02

D2	MCT PWR CLR L
E2	CPT TS2 (1)H
H2	CPT TS3 (1)H
K2	CPT TS4 (1)H
M2	CPT TS5 B (1)H
P2	CPS EXECUTE B (1)H
S2	CPS FETCH B (1)H
T2	CST IO PRESET L
V2	PWF PWR SKIP L

M903 K02

B1	PRA AC 00 (1)H
D1	PRA AC 01 (1)H
E1	PRB AC 02 (1)H
H1	PRB AC 03 (1)H
J1	PRC AC 04 (0)H
L1	PRC AC 04 (1)H
M1	PRC AC 05 (1)H
P1	PRD AC 06 (1)H
S1	PRD AC 07 (1)H

M903 K02

D2	PRE AC 08 (1)H
E2	PRE AC 09 (1)H
H2	PRF AC 10 (0)H
K2	PRF AC 10 (1)H
M2	PRF AC 11 (0)H
P2	PRF AC 11 (1)H
S2	RCL LOAD MSC 4 H
T2	PRB AC 03 (0)H
V2	CPS T BREAK (1)H

M901 L02

A1	YAD AD 02 (1)H
B1	YADC AD 03 (0)H
C1	YADC AD 04 (0)H
D1	YADC AD 05 (0)H
E1	YADC AD 06 (0)H
F1	YADC AD 07 (0)H
H1	YADC AD 08 (0)H
J1	YADC AD 09 (0)H
K1	YADC AD 10 (0)H
L1	YADC AD 11 (0)H
M1	CPT (DSC+DIS) H
N1	SLA (DSC*EXECUTE 2) L
P1	INS DIS L
R1	INS DSC L
S1	CPR RUN (1)H
T1	GND
U1	DSC BUSY H
V1	YADC A-D RECYCLE L

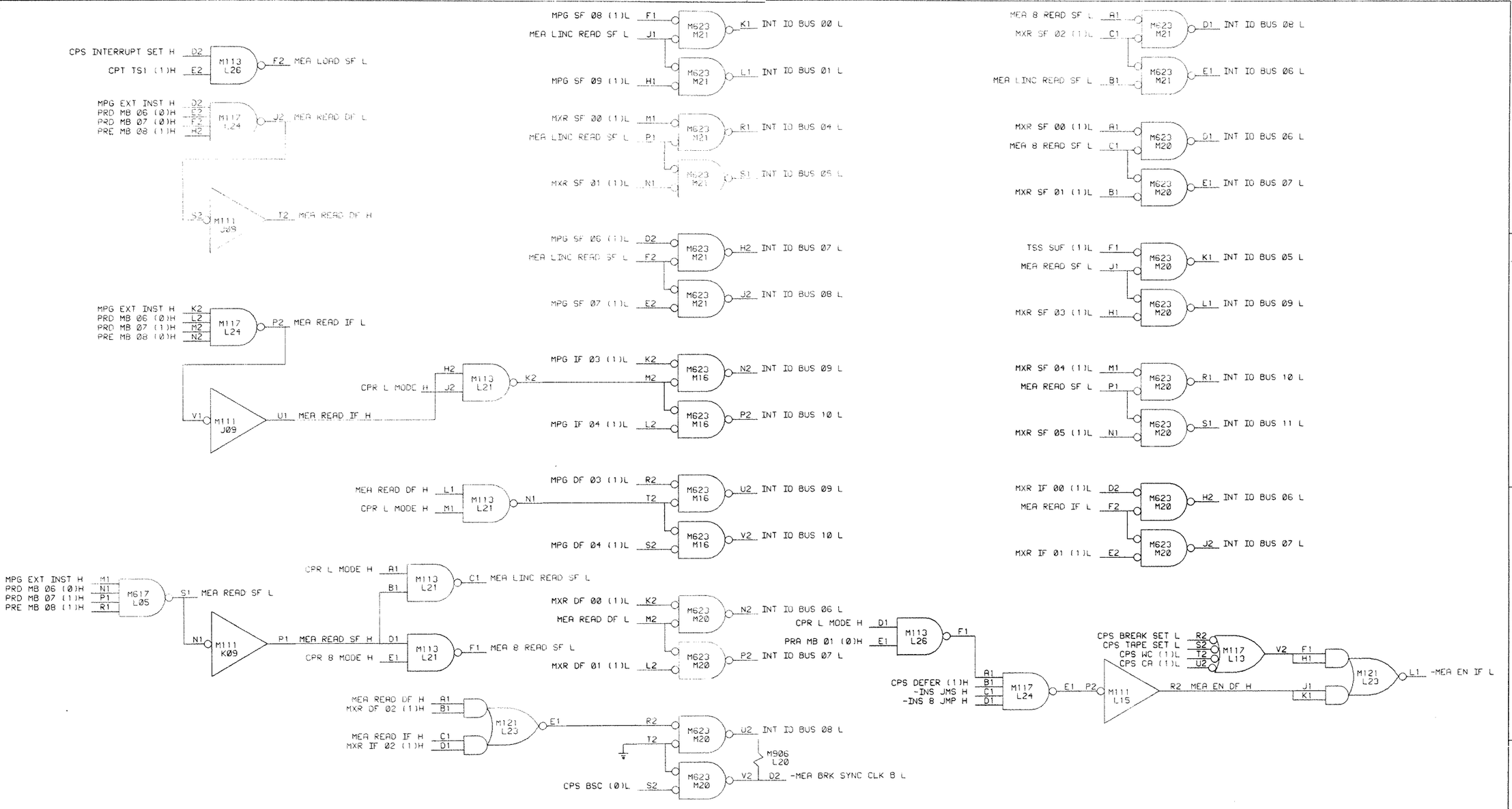
* ADD GND DISABLE WIRE FOR PDP-12C SYSTEMS ONLY WHICH DO NOT HAVE VC12 SCOPE CONTROL.

M901 L02

A2	MXF EA 0 L
B2	MXF EA 1 L
C2	
D2	MXR DF 00 (1)H
E2	MXR DF 01 (1)H
F2	MXR DF 02 (1)H
H2	MPGDF 03 (1)H
J2	MPG DF 04 (1)H
K2	MXR IF 00 (1)H
L2	MXR IF 01 (1)H
M2	MXR IF 02 (1)H
N2	MPG IF 03 (1)H
P2	MPG IF 04 (1)H
R2	INR IR 08 (1)H
S2	YADC FAST SAM (1)H
T2	LCX TF 00 (1)H
U2	LCX TF 01 (1)H
V2	LCX TF 02 (1)H

REVISIONS			REVISIONS			REVISIONS		
CHK	CHANGE NO.	REV.	CHK	CHANGE NO.	REV.	CHK	CHANGE NO.	REV.
JB	EP12-00001	A	NR	EP12-00007	E		EP12-00036	K
	ADS			A WASHINGTON				
	J SCANLAN 3/13/69			J SCANLAN				
	EP12-00002	B	NR	EP12-00011	F			
	A WASHINGTON 5/20/69			BRUCE KORTEING				
	J SCANLAN 5/22/69			J SCANLAN				
NR	EP12-00004	C		EP12-M0016	H			
	A WASHINGTON 7/9/69			ADS				
	J SCANLAN 7/9/69			J SCANLAN				
	EP12-00006	D	GH	EP12-00033	J			
	A WASHINGTON			N CALE 2/5/71				
	J SCANLAN			J SCANLAN 2/14/71				

DRN. D SHEPARD	DATE 2/20/69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. J BISONETE	DATE 2/20/69	
ENG. L GALE	DATE 2/20/69	TITLE: INTER PROC CABLES
PROJ. ENG. L GALE	DATE 2/20/69	
PROD. D CALL	DATE 2/20/69	
FIRST USED ON: EP12		SIZE D; CODE 85; NUMBER EP12-0-IPC; REV. K
SCALE		
SHEET 1 OF 1		DIST.



REVISIONS			REVISIONS		
CHK	CHANGE NO.	REV.	CHK	CHANGE NO.	REV.
JB	EP12-0000I	A	FV	EP12-00021	E
	ADS			D. SOUTHER 6-16-70	
	J SCANLAN 9/13/69			J. SCANLAN 6-17-70	
	EP12-00002	B	TC	EP12-00023	F
	A WASHINGTON 5/20/69			D. SOUTHER 6-30-70	
	J SCANLAN 5/22/69			D. MACKLIN 7-2-70	
NR	EP12-00004	C	[illegible]	EP12-00030	H
	A WASHINGTON 7/9/69			[illegible]	
	L GALE 7/15/69				
NR	EP12-0001S	D			
	K.COTE 10-14-69				
	J.SCANLAN 10-17-69				

DRN. D SHEPARD	DATE 2/20/69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. J BISONETE	DATE 2/20/69	
ENG. L GALE	DATE 2/20/69	TITLE: MEM EXTN AC INPUTS
PROJ. ENG. L GALE	DATE 2/20/69	
PROD. J CALL	DATE 2/20/69	
FIRST USED ON: EP12		SIZE D | CODE BS | NUMBER EP12-0-MEA | REV. H
SCALE		
SHEET 1 OF 1		DIST.

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REVISIONS			REVISIONS			REVISIONS		
CHK	CHANGE NO.	REV.	CHK	CHANGE NO.	REV.	CHK	CHANGE NO.	REV.
JB	EP12-00001	A	NR	EP12-00007	E	GH	EP12-00036	K
	ADS			A WASHINGTON 8/20/69			R SOFKA 5-6-71	
	J SCANLAN 3/13/69			L GALE 8/22/69			J SCANLAN 5-20-71	
PD	EP12-00002	B	NR	EP12-00015	F		EP12-00044	L
	A WASHINGTON 5/20/69			K. COTE 10-14-69				
	J SCANLAN 5/22/69			J. SCANLAN 10-14-69				
	EP12-00003	C	NR	EP12-00018	H			
	A WASHINGTON 6/18/69			D. SOUTHER 12-2-69				
	L GALE 6/20/69			J. SCANLAN 12-4-69				
NR	EP12-00004	D	GH	EP12-00030	J			
	A WASHINGTON 7/9/69			K WALSH 11/15/70				
				D MACKLIN 11/19/70				

DRN. D SHEPARD	DATE 2/20/69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
CHK'D. J BISONETE	DATE 2/20/69		
ENG. L GALE	DATE 2/20/69	TITLE MEM PAGE EXTN CONTROL	
PROJ. ENG. L GALE	DATE 2/20/69		
PROD. D CALL	DATE 2/20/69		
FIRST USED ON EP12			
SCALE		SIZE D | CODE BS | NUMBER EP12-0-MPG | REV. L	
SHEET 1 OF 1		DIST.	

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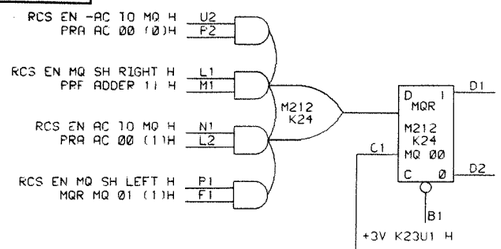

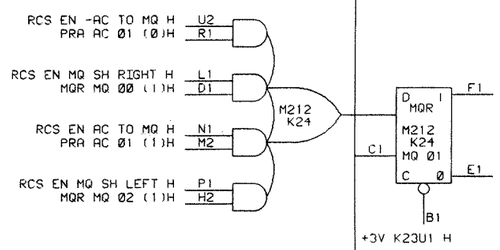

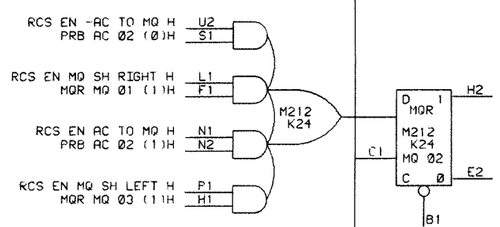

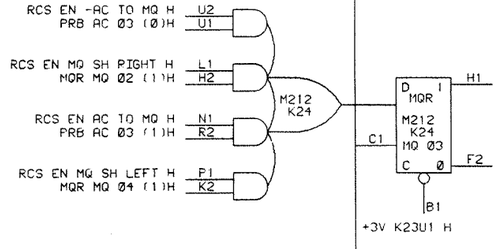

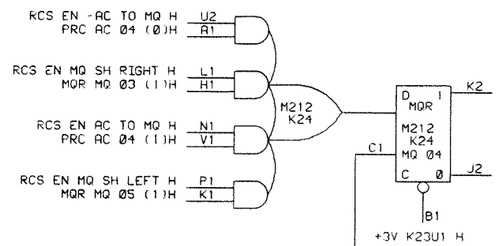

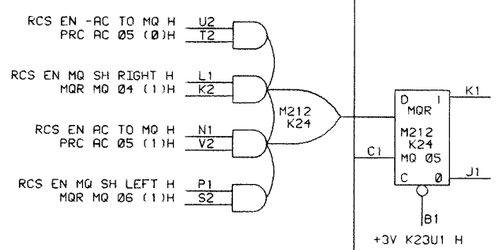

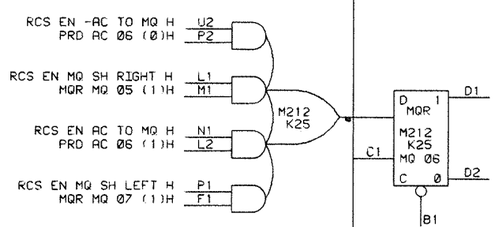

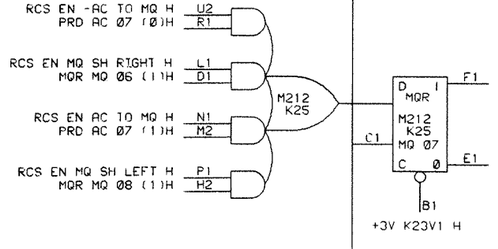

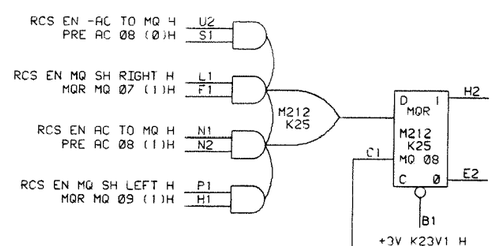

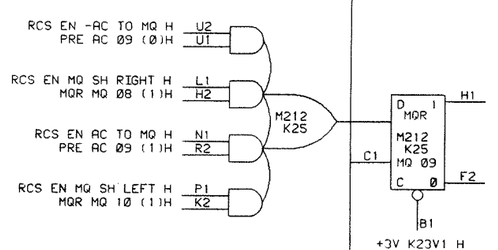

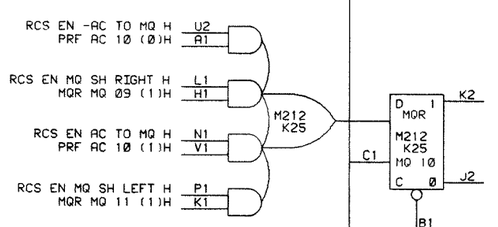

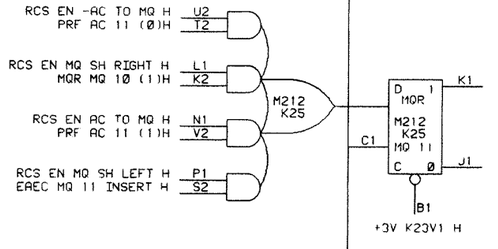

REVISIONS		
CHK	CHANGE NO.	REV.
PD	EP12-00002	A
	A.WASHINGTON 5-20-69	
	J. SCANLAN 5-22-69	
	EP12-00030	B
	11-17-70	

DRN. D. SHEPARD	DATE 2-20-69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. J.BISSONNETTE	DATE 2-20-69	
ENG. L. GALE	DATE 2-20-69	TITLE: MUL QUOTIENT
PROJ. ENG. L. GALE	DATE 2-20-69	
PROD. D. CALL	DATE 2-20-69	
FIRST USED ON: EP12		SIZE D | CODE BS | NUMBER EP12-0-MQR | REV. B
SCALE		DIST.
SHEET 1 OF 1		

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INS LOH L A1
INS STH L B1
INS SHD L C1
M115 K13
D1 PMA HALF WORD H
CYI TO INDEX H
CPT TSO (1)H
P1 R1 S1
M115 K13
U1
B1

RCB EN DF ADDRESS H C1
MPG DF Ø3 (1)H D1
RCD EN DATA BITS H D2
IOA DATA Ø0 H E1
RCC EN IO BUS H E2
IOA IO BUS Ø0 H F1
RCD EN AC N-6L H F2
PRD AC Ø6 (1)H H1
M169 K15
A1 PMA TMSC Ø0 H

+3V K14U1 H
RCD EN A D H R2
YAD AD Ø2 (1)H S1
RCD EN TAPE BUS H P2
LTRA TAPE BUS Ø0 H R1
RCC SET PC Ø-1 H N2
RCC SET PC Ø-1 H P1
RCB EN IF ADDRESS H M2
MPG IF Ø3 (1)H N1
M169 K15
L1
M1 PMA BMSC Ø0 H

+3V K14U1 H
RCB EN DF ADDRESS H C1
MPG DF Ø4 (1)H H2
RCD EN DATA BITS H D2
IOA DATA Ø1 H J2
RCC EN IO BUS H E2
IOA IO BUS Ø1 H K2
RCD EN AC N-6 L H F2
PRD AC Ø7 (1)H L2
M169 K15
J1
K1 PMA TMSC Ø1 H

+3V K14U1 H
RCD EN A D H R2
YAD AD Ø2 (1)H V1
RCD EN TAPE BUS H P2
LTRA TAPE BUS Ø1 H U1
RCC SET PC Ø-1 H N2
RCC SET PC Ø-1 H T2
RCB EN IF ADDRESS H M2
MPG IF Ø4 (1)H S2
M169 K15
U2
V2 PMA BMSC Ø1 H

CST MF1S1 (1)H C1
D1
RCD EN DATA BITS H D2
IOA DATA Ø2 H E1
RCC EN IO BUS H E2
IOA IO BUS Ø2 H F1
RCD EN AC N-6 L H F2
PRE AC Ø8 (1)H H1
M169 K16
+3V K14U1 H
B1
A1 PMA TMSC Ø2 H

RCD EN A D H R2
YAD AD Ø2 (1)H S1
RCD EN TAPE BUS H P2
LTRB TAPE BUS Ø2 H R1
RCA ENABLE IR 2-7 H N2
INR IR Ø2 (1)H P1
RCA EN MSC 4 H M2
CPS EN TRAP (1)H N1
M169 K16
+3V K14U1 H
L1
M1 PMA BMSC Ø2 H

CST MF1S1 (1)H C1
CSI KEY ST 400 H H2
RCD EN DATA BITS H D2
IOA DATA Ø3 H J2
RCC EN IO BUS H E2
IOA IO BUS Ø3 H K2
RCD EN AC N-6 L H F2
PRE AC Ø9 (1)H L2
M169 K16
+3V K14U1 H
J1
K1 PMA TMSC Ø3 H

RCD EN A D H R2
YADC AD Ø3 (Ø)H V1
RCD EN TAPE BUS H P2
LTRB TAPE BUS Ø3 H U1
RCA ENABLE IR 2-7 H N2
INR IR Ø3 (1)H T2
RCA EN MSC 4 H M2
RCD EN 1 TRAP (1)H S2
M169 K16
+3V K14U1 H
U2
V2 PMA BMSC Ø3 H

+3V K14U1 H
C1
D1
RCD EN DATA BITS H D2
IOA DATA Ø4 H E1
RCC EN IO BUS H E2
IOA IO BUS Ø4 H F1
RCD EN AC N-6 L H F2
PRF AC 10 (1)H H1
M169 K17
B1
A1 PMA TMSC Ø4 H

+3V K14U1 H
RCD EN A D H R2
YADC AD Ø4 (Ø)H S1
RCD EN TAPE BUS H P2
LTRC TAPE BUS Ø4 H R1
RCA ENABLE IR 2-7 H N2
INR IR Ø4 (1)H P1
RCA EN MSC 4 H M2
PMA SIZE (1)H N1
M169 K17
L1
M1 PMA BMSC Ø4 H

DSC SIZE (1)L S2
M111 L15
T2
CPS TRAP L L1
PMB SET INT ADD L M1
M112 H32
N1
+3V K14U1 H
J1
RCD EN DATA BITS H D2
IOA DATA Ø5 H J2
RCC EN IO BUS H E2
IOA IO BUS Ø5 H K2
RCD EN AC N-6 L H F2
PRF AC 11 (1)H L2
M169 K17
K1 PMA TMSC Ø5 H

+3V K14U1 H
RCD EN A D H R2
YADC AD Ø5 (Ø)H V1
RCD EN TAPE BUS H P2
LTRC TAPE BUS Ø5 H U1
RCA ENABLE IR 2-7 H N2
INR IR Ø5 (1)H T2
RCA EN MSC 4 H M2
YADC FAST SAM (1)H S2
M169 K17
U2
V2 PMA BMSC Ø5 H

REVISIONS		
CHK	CHANGE NO.	REV.
JB	EP12-00001	A
	ADS	
	J SCANLAN 3/13/69	
	EP12-00015	B

DRN. D SHEPARD	DATE 2/20/69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. J BISONETE	DATE 2/20/69	
ENG. L GALE	DATE 2/20/69	TITLE PROCESSOR MISCELLANEOUS A
PROJ. ENG. L GALE	DATE 2/20/69	
PROD. D CALL	DATE 2/20/69	
FIRST USED ON EP12		SIZE D CODE BS NUMBER EP12-Ø-PMA REV. B
SCALE		
SHEET 1 OF 1		DIST.

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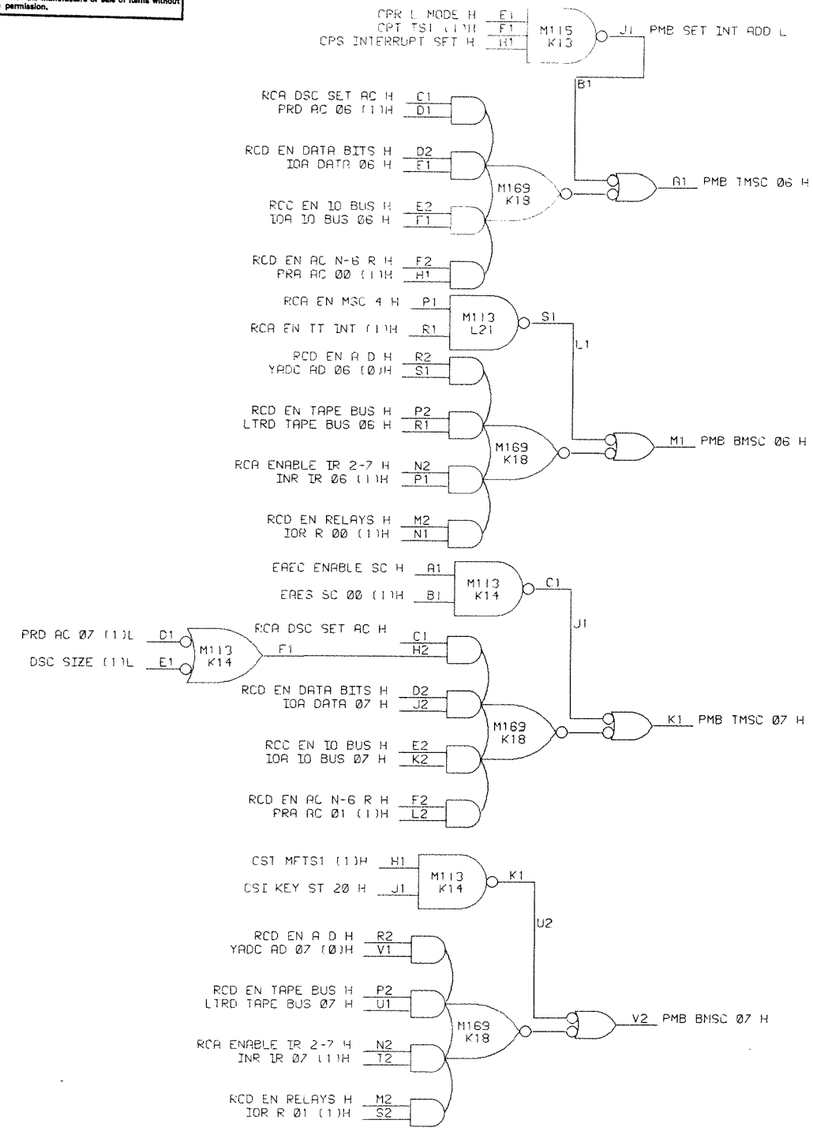

REVISIONS		
CHK	CHANGE NO.	REV.

DRN.	DATE
CHK'D.	DATE
ENG.	DATE
PROJ. ENG.	DATE
PROD.	DATE
FIRST USED ON	EP12
SCALE	
SHEET 1 OF 1	

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE: PROCESSOR MISCELLANEOUS B

SIZE	CODE	NUMBER	REV.
D	BS	EP12-0-PMB	A

DIST.

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PRA CARRY ØØ L

R2 S2 T2 U2 — M627 J14 V2 — PRA CARRY ØØ H

+3V J14 U1

RCD EN DATA ADD H (JL2 HN1)
IOA DATA ADD ØØ H

RCB EN MEM Ø-5 H (HV1 HL1)
MCS MEM ØØ H

RCC EN PC Ø-1 H (HK1)
PRA PC ØØ (1) H

RCD EN RSW Ø-5 H (HD2 HE2)
CSI RSW ØØ H

RCB EN MA Ø-4 H (HR1)
PRA MA ØØ (1) H

RCB EN MB Ø-1 H (HP1)
PRA MB ØØ (1) H

PMA BMSC ØØ H (HF2)

PRA AC ØØ (1) H (HJ2 HJ1)
RCA SET AC H

JT2 — PRA PARTIAL SUM ØØ L

RCC EN BCL H (JD1)
PRA MB ØØ (Ø) H
PRA AC ØØ (1) H

RCA EN AC Ø-5 H (HT2)
PRA AC ØØ (1) H

RCC EN-AC H (JH1)
PRA AC ØØ (Ø) H

RCC EN MQ H (HS2)
MQR MQ ØØ (1) H

PMA TMSC ØØ H (HU1)

RCC EN BSE H (JE1)
PRA MB ØØ (1) H
PRA AC ØØ (Ø) H

HP2

HH1 — ADD — HH2 PRA ADDER ØØ L

RCS EN SHIFT RIGHT H (HE1 HB1)
FLE HIGH END SHIFT IN H

RCS EN NO SHIFT H (HJ2)

RCS EN SHIFT LEFT H (HF1)
- PRA ADDER Ø1 H

RCC EN LSW H (HC1)

HD1

CSI LSW ØØ H (HN2)

PRA MA ØØ (1) H
PRA MA ØØ (Ø) H
PRA MA Ø1 (Ø) H
PRA MA Ø1 (1) H

HA1 — PRA ADDRESS MATCH Ø-1 H

CSI LSW Ø1 H (HM2)

RCC EN LSW H (HC1)

RCS EN NO SHIFT H (HJ2)

RCS EN SHIFT LEFT H (HL2)
- PRA ADDER Ø2 H

RCS EN SHIFT RIGHT H (HE1)
- PRA ADDER ØØ H

HV2

RCD EN DATA ADD H (JL2 JP1)
IOA DATA ADD Ø1 H

RCB EN MEM Ø-5 H (HV1 JL1)
MCS MEM Ø1 H

RCC EN PC Ø-1 H (HK1)
PRA PC Ø1 (1) H

RCD EN RSW Ø-5 H (HD2 JM1)
CSI RSW Ø1 H

RCB EN MA Ø-4 H (JM2)
PRA MA Ø1 (1) H

RCB EN MB Ø-1 H (JP2)
PRA MB Ø1 (1) H

PMA BMSC Ø1 H (JN1)

PRA AC Ø1 (1) H (HJ1)
RCA SET AC H

JV2 — PRA PARTIAL SUM Ø1 L

RCC EN BCL H (JD1)
PRA MB Ø1 (Ø) H
PRA AC Ø1 (1) H

RCA EN AC Ø-5 H (HT2)
PRA AC Ø1 (1) H

RCC EN-AC H (JH1)
PRA AC Ø1 (Ø) H

RCC EN MQ H (HS2)
MQR MQ Ø1 (1) H

PMA TMSC Ø1 H (JK1)

RCC EN BSE H (JE1)
PRA MB Ø1 (1) H
PRA AC Ø1 (Ø) H

JH2

ADD — HK2 PRA ADDER Ø1 L

HM1 — PRA CARRY IN Ø1 L

HV2

RCL LOAD MA H (JF2) — D 1 — PRA MA ØØ — C Ø — JV1 HS1

RCL LOAD PC H (JA1) — PRA PC ØØ — JB1 HK1

PRA REG BUS ØØ H — HD1

RCL LOAD MB H (JC1) — PRA MB ØØ — JS1 JF1

RCL LOAD AC H (HU2) — PRA AC ØØ — JU1 HB2

RCL LOAD MA H (JF2) — PRA MA Ø1 — JK2 JN2

RCL LOAD PC H (JA1) — PRA PC Ø1 — JE2 JT2

RCL LOAD MB H (JC1) — PRA MB Ø1 — JR1 JR2

PRA REG BUS Ø1 H

RCL LOAD AC H (HU2) — PRA AC Ø1 — JD2 JJ2

- PRA PARTIAL SUM ØØ H (IT2)

PRA AC ØØ (1) H (HB2)

- PRA PARTIAL SUM ØØ H (IT2)
PRA AC ØØ (Ø) H (JU2)

- PRA PARTIAL SUM Ø1 H (JV2)
PRA AC Ø1 (Ø) H (JT2)

PRA AC Ø1 (1) H (JT2)

JU2 — PRA CARRY OK Ø-1 L

- PRA PARTIAL SUM Ø1 H (JV2)

PRA AC ØØ (1) H
PRA MB ØØ (Ø) H

PRA AC ØØ (Ø) H
PRA MB ØØ (1) H

JS2 — PRA AC-EQ MB Ø,1 L

PRA AC Ø1 (1) H
PRA MB Ø1 (Ø) H

PRA AC Ø1 (Ø) H
PRA MB Ø1 (1) H

PRA LINC COUNT L

CYI ADD NDX H (D2)
CPT TS 1(1) H (E2)
CPR L MODE H (F2)
+3V J14 U1 (H2)
M627 J14 — V2 — F1 H1 J1 K1 — M627 J14 — L1 — - PRA CARRY IN Ø1 H

+3V J14 U1 (K2)
CPR L MODE H (L2)
CYI PC INCREMENT H (M2)
CPT TS 2(1) H (N2)
M627 J14 — P2

- PRA CARRY Ø2 L

SLA (DSC * EXECUTE 2) H (S1)
CPT TS 3(1) H (U1)
M160 H13 — V2 — PRA LINC COUNT L
V1 U2
CYI LINC INDEXING H

- PRB CARRY Ø2 H (M1 N1 P1 R1)
+3V J14 U1
M627 J14 — S1 — - PRA CARRY Ø2 L

M221
H15
J15

REVISIONS	REV	CHANGE NO	CHK
	A	00002	J. SCANLON 12/1/68
	B	EP12-00004	L. GALE 2/15/69
	C	EP12-00015	L. GALE 10/17/68
	D	EP12-00023	GALE 6/30/70

DEC FORM NO DRD 102A

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINAL SURFACE QUALITY
REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL

FINISH

DRN. — DATE 12/13/68
CHK. J. Scanlon — DATE 2/15/69
ENG. L. Gale — DATE 2/15/69
PROJ. ENG. L. Gale — DATE 2/19/69
PROD. D. Mack — DATE 2/19/69

FIRST USED ON EP12

SCALE

SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE
PRA
PROCESSOR REG.
BITS Ø & 1

SIZE D | CODE BS | NUMBER EP12-Ø-PRA | REV. D

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RCD EN DATA ADD H
IOA DATA ADD Ø2 H — JL2 HN1 — JT2

RCB EN MEM Ø-5 H
MCS MEM Ø2 H — HV1 HL1

RCC EN PC 2-11 H
PRB PC Ø2 (1) H — HK1

RCD EN RSW Ø-5 H
CSI RSW Ø2 H — HD2 HE2

RCB EN MA Ø-9 H
PRB MA Ø2(1) H — HR1

RCB EN MB 2-9 H
PRB MB Ø2(1) H — HP1

PMA BMSC Ø2 H — HF2

PRB AC Ø2 (1) H
RCA SET AC H — HJ1

PRB PARTIAL SUM Ø2 L

RCC EN BCL H
PRB MB Ø2(Ø) H
PRB AC Ø2 (1) H — JD1

RCA EN AC Ø-5 H
PRB AC Ø2(1) H — HT2

RCC EN-AC H
PRB AC Ø2(Ø) H — JH1

RCC EN MQ H
MQR MQ Ø2(1) H — HS2 HR2

PMA TMSC Ø2 H — HU1

RCC EN BSE H
PRB MB Ø2(1) H
PRB AC Ø2(Ø) H — JE1

HP2

PRB CARRY Ø2 L

HH1 ADD HH2 PRB ADDER Ø2 L

RCS EN SHIFT RIGHT H
-PRB ADDER Ø1 H — HE1 HB1

RCS EN NO SHIFT H — HJ2

RCS EN SHIFT LEFT H
-PRB ADDER Ø3 H — HF1

RCC EN LSW H — HC1

HD1 PRB REG BUS Ø2 H

CSI LSW Ø2 H — HN2

PRB MA Ø2 (1) H

PRB MA Ø2(Ø) H

PRB MA Ø3(Ø) H

PRB MA Ø3(1) H

HA1 PRB ADDRESS MATCH 2-3 H

CSI LSW Ø3 H — HM2

RCD EN DATA ADD H
IOA DATA ADD Ø3 H — JL2 JP1

RCB EN MEM Ø-5 H
MCS MEM Ø3 H — HV1 JL1

RCC EN PC 2-11 H
PRB PC Ø3(1) H — HK1

RCD EN RSW Ø-5 H
CSI RSW Ø3 H — HD2 JM1

RCB EN MA Ø-9 H
PRB MA Ø3(1) H — JM2

RCB EN MB 2-9 H
PRB MB Ø3(1) H — JP2

PMA BMSC Ø3 H — JN1

PRB AC Ø3(1) H
RCA SET AC H — HJ1

RCC EN BCL H
PRB MB Ø3(Ø) H
PRB AC Ø3(1) H — JD1

RCA EN AC Ø-5 H
PRB AC Ø3 (1) H — HT2

RCC EN-AC H
PRB AC Ø3(Ø) H — JH1

RCC EN MQ H
MQR MQ Ø3(1) H — HS2 JJ1

PMA TMSC Ø3 H — JK1

RCC EN BSE H
PRB MB Ø3(1) H
PRB AC Ø3(Ø) H — JE1

JH2

PRC CARRY Ø4 L

JV2 PRB PARTIAL SUM Ø3 L

ADD HH2 PRB ADDER Ø3 L HM1

RCC EN LSW H — HC1

RCS EN NO SHIFT H — HJ2

RCS EN SHIFT LEFT H
-PRB ADDER Ø4 H — HF1 HL2

RCS EN SHIFT RIGHT H
-PRB ADDER Ø2 H — HE1

HV2 PRB REG BUS Ø3 H

RCL LOAD MA H — JF2 — D 1 PRB MA Ø2 C Ø — HS1 JV1

RCL LOAD PC H — JA1 — D 1 PRB PC Ø2 C Ø — JB1

RCL LOAD MB H — JC1 — D 1 PRB MB Ø2 C Ø — JF1 JS1

RCL LOAD AC H — HU2 — D 1 PRB AC Ø2 C Ø — HB2 JU1

RCL LOAD MA H — JF2 — D 1 PRB MA Ø3 C Ø — JN2 JK2

RCL LOAD PC H — JA1 — D 1 PRB PC Ø3 C Ø — JE2

RCL LOAD MB H — JC1 — D 1 PRB MB Ø3 C Ø — JR2 JE1

RCL LOAD AC H — HU2 — D 1 PRB AC Ø3 C Ø — JJ2 JD2

- PRB PARTIAL SUM Ø2 H

PRB AC Ø2 (1) H
-PRB PARTIAL SUM Ø2 H
PRB AC Ø2(Ø) H
-PRB PARTIAL SUM Ø3 H
PRB AC Ø3(Ø) H
PRB AC Ø3 (1) H — JU2 PRB CARRY OK 2-3 L

- PRB PARTIAL SUM Ø3 H

PRB AC Ø2 (1) H
PRB MB Ø2(Ø) H
PRB AC Ø2(Ø) H
PRB MB Ø2 (1) H
PRB AC Ø3 (1) H
PRB MB Ø3(Ø) H
PRB AC Ø3(Ø) H
PRB MB Ø3 (1) H — JS2 PRB AC-EQ MB 2-3 L

M221
H16
J16

REVISIONS	CHK	CHANGE NO.	REV.
		00002 J. Scanlon 12/65	A
		EP12-00015 Walter Meaney 10-17-69	B
		EP12-00023 L. GALE 6-30-70	C
		GALE 7-2-70	

QTY.	DESCRIPTION	PART NO.	ITEM NO.
	PARTS LIST		

UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINAL SURFACE QUALITY √
REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL

FINISH

DRN.	J. Scanlon	DATE 12/13/68
CHK.	J. Scanlon	DATE 2/14/69
ENG.		DATE 2/14/69
PROJ. ENG.		DATE 2/14/69
PROD.		DATE 2/14/69

FIRST USED ON EP12

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE
PRB
PROCESSOR REG.
BITS 2 & 3

SIZE	CODE	NUMBER	REV.
D	85	EP12-Ø-PRB	C

SCALE
SHEET 1 OF 1
DIST.

DEC FORM NO. DRD 102A

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RCD EN DATA ADD H — JL2
IOA DATA ADD Ø4 H — HN1
RCB EN MEM Ø-5 H — HV1
MCS MEM Ø4 H — HL1
RCC EN PC 2-11 H — HK1
PRC PC Ø4 (1) H
RCD EN RSW Ø-5 H — HD2
CSI RSW Ø4 H — HE2
RCB EN MA Ø-4 H — HR1
PRC MA Ø4 (1) H
RCB EN MB 2-4 H — HP1
PRC MB Ø4 (1) H
PMA BMSC Ø4 H — HF2
PRC AC Ø4 (1) H — HJ1
RCA SET AC H

JT2 — PRC PARTIAL SUM Ø4 L

RCC EN BCL H — JD1
PRC MB Ø4 (Ø) H
PRC AC Ø4 (1) H
RCA EN AC Ø-5 H — HT2
PRC AC Ø4 (1) H
RCC EN-AC H — JH1
PRC AC Ø4 (Ø) H
RCC EN MQ H — HS2
MQR MQ Ø4 (1) H — HR2
PMA TMSC Ø4 H — HU1
RCC EN BSE H — JE1
PRC MB Ø4 (1) H
PRC AC Ø4 (Ø) H

HP2

PRC CARRY Ø4 L

HH1 — ADD — HH2 PRC ADDER Ø4 L

RCS EN SHIFT RIGHT H — HE1
-PRB ADDER Ø3 H — HB1
RCS EN NO SHIFT H — HJ2
RCS EN SHIFT LEFT H — HF1
-PRC ADDER Ø5 H
RCC EN LSW H — HC1

HD1 — PRC REG BUS Ø4 H

CSI LSW Ø4 H — HN2

PRC MA Ø4 (1) H
PRC MA Ø4 (Ø) H
PRC MA Ø5 (Ø) H
PRC MA Ø5 (1) H

HA1 — PRC ADDRESS MATCH 4-5 H

CSI LSW Ø5 H — HM2

RCL LOAD MA H — JF2 — D 1 PRC MA Ø4 C Ø — JV1 HS1
RCL LOAD PC H — JA1 — D 1 PRC PC Ø4 C Ø — JB1
RCL LOAD MB H — JC1 — D 1 PRC MB Ø4 C Ø — JS1 JF1
RCL LOAD AC H — HU2 — D 1 PRC AC Ø4 C Ø — JU1 HB2
RCL LOAD MA H — JF2 — D 1 PRC MA Ø5 C Ø — Jk2 JN2
RCL LOAD PC H — JA1 — D 1 PRC PC Ø5 C Ø — JE2
RCL LOAD MB H — JC1 — D 1 PRC MB Ø5 C Ø — JR1 JR2
RCL LOAD AC H — HU2 — D 1 PRC AC Ø5 C Ø — JD2 JJ2

- PRC PARTIAL SUM Ø4 H
PRC AC Ø4 (1) H
-PRC PARTIAL SUM Ø4 H
PRC AC Ø4 (Ø) H
-PRC PARTIAL SUM Ø5 H
PRC AC Ø5 (Ø) H
PRC AC Ø5 (1) H — JU2 PR CARRY OK 4-5 L
- PRC PARTIAL SUM Ø5 H

PRC AC Ø4 (1) H
PRC MB Ø4 (Ø) H
PRC AC Ø4 (Ø) H
PRC MB Ø4 (1) H
PRC AC Ø5 (1) H
PRC MB Ø5 (Ø) H
PRC AC Ø5 (Ø) H
PRC MB Ø5 (1) H — JS2 PRC AC-EQ MB 4-5 L

RCD EN DATA ADD H — JL2
IOA DATA ADD Ø5 H — JP1
RCB EN MEM Ø-5 H — HV1
MCS MEM Ø5 H — JL1
RCC EN PC 2-11 H — HK1
PRC PC Ø5 (1) H
RCD EN RSW Ø-5 H — HD2
CSI RSW Ø5 H — JM1
RCB EN MA 5-11 H — JM2
PRC MA Ø5 (1) H
RCB EN MB 5-11 H — JP2
PRC MB Ø5 (1) H
PMA BMSC Ø5 H — JN1
PRC AC Ø5 (1) H — HJ1
RCA SET AC H

JV2 — PRC PARTIAL SUM Ø5 L

RCC EN BCL H — JD1
PRC MB Ø5 (Ø) H
PRC AC Ø5 (1) H
RCA EN AC Ø-5 H — HT2
PRC AC Ø5 (1) H
RCC EN-AC H — JH1
PRC AC Ø5 (Ø) H
RCC EN MQ H — HS2
MQR MQ Ø5 (1) H — JJ1
PMA TMSC Ø5 H — JK1
RCC EN BSE H — JE1
PRC MB Ø5 (1) H
PRC AC Ø5 (Ø) H

JH2

PRD CARRY Ø6 L

ADD — HK2 PRC ADDER Ø5 L — HM1

RCC EN LSW H — HC1
RCS EN NO SHIFT H — HJ2
RCS EN SHIFT LEFT H — HF1
-PRC ADDER Ø6 H — HL2
RCS EN SHIFT RIGHT H — HE1
-PRC ADDER Ø4 H

HV2 — PRC REG BUS Ø5 H

M221
H17
J17

REVISIONS	CHK	CHANGE NO	REV
		00002	A
		EP12-00015	B
FV		EP12-00023	C

DEC FORM NO DRD 102A

UNLESS OTHERWISE SPECIFIED
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINAL SURFACE QUALITY √
REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL

FINISH

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

DRN		DATE 12/13/68
CHK		DATE 2/18/69
ENG		DATE 2/19/69
PROJ. ENG		DATE 2/19/69
PROD.		DATE 2/19/69

FIRST USED ON EP12

SCALE

SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE
PRC
PROCESSOR REG.
BITS 4 & 5

SIZE	CODE	NUMBER	REV.
D	85	EP12-Ø-PRC	C

DIST.

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RCD EN DATA ADD H (JL2)
IOA DATA ADD Ø6 H (HN1)
RCB EN MEM 6-11 H (HV1)
MCS MEM Ø6 H (HL1)
RCC EN PC 2-11 H (HK1)
PRD PC Ø6(1) H
RCD EN RSW 6-11 H (HD2)
CSI RSW Ø6 H (HE2)
RCB EN MA 5-11 H (HR1)
PRD MA Ø5(1) H
RCB EN MB 5-11 H (HP1)
PRD MB Ø6(1) H
PMB BMSC Ø6 H (HF2)
PRD AC Ø6(1) H
RCA SET AC H (HJ1)
→ JT2 PRD PARTIAL SUM Ø6 L

RCC EN BCL H (JD1)
PRD MB Ø6(Ø) H
PRD AC Ø6(1) H
RCA EN AC 6-11 H (HT2)
PRD AC Ø6(1) H
RCC EN-AC H (JH1)
PRD AC Ø6(Ø) H
RCC EN MQ H (HS2)
MQR MQ Ø6(1) H (HR2)
PMB TMSC Ø6 H (HU1)
RCC EN BSE H (JE1)
PRD MB Ø6(1) H
PRD AC Ø6(Ø) H
→ HP2

PRD CARRY Ø6 L
HH1 ADD HH2 PRD ADDER Ø6 L

RCS EN SHIFT RIGHT H (HE1)
-PRC ADDER Ø5 H (HB1)
RCS EN NO SHIFT H (HJ2)
RCS EN SHIFT LEFT H (HF1)
-PRD ADDER Ø7 H
RCC EN LSW H (HC1)
→ HD1 PRD REG BUS Ø6 H

CSI LSW Ø6 H (HN2)
PRD MA Ø6(1) H
PRD MA Ø6(Ø) H
PRD MA Ø7(Ø) H
PRD MA Ø7(1) H
→ HA1 PRD ADDRESS MATCH 6-7 H

CSI LSW Ø7 H (HM2)

RCC EN BCL H (JD1)
PRD MB Ø7(Ø) H
PRD AC Ø7(1) H
RCA EN AC 6-11 H (HT2)
PRD AC Ø7(1) H
RCC EN-AC H (JH1)
PRD AC Ø7(Ø) H
RCC EN MQ H (HS2)
MQR MQ Ø7(1) H (JJ1)
PMB TMSC Ø7 H (JK1)
RCC EN BSE H (JE1)
PRD MB Ø7(1) H
PRD AC Ø7(Ø) H
→ JH2

PRE CARRY Ø8 L
HM1 ADD HK2 PRD ADDER Ø7 L

RCC EN LSW H (HC1)
RCS EN NO SHIFT H (HJ2)
RCS EN SHIFT LEFT H (HF1)
-PRE ADDER Ø8 H (HL2)
RCS EN SHIFT RIGHT H (HE1)
-PRD ADDER Ø6 H
→ HV2 PRD REG BUS Ø7 H

RCD EN DATA ADD H (JL2)
IOA DATA ADD Ø7 H (JP1)
RCB EN MEM 6-11 H (HV1)
MCS MEM Ø7 H (JL1)
RCC EN PC 2-11 H (HK1)
PRD PC Ø7(1) H
RCD EN RSW 6-11 H (HD2)
CSI RSW Ø7 H (JM1)
RCB EN MA 5-11 H (JM2)
PRD MA Ø7(1) H
RCB EN MB 5-11 H (JP2)
PRD MB Ø7(1) H
PMB BMSC Ø7 H (JN1)
PRD AC Ø7(1) H
RCA SET AC H (HJ1)
→ JV2 PRD PARTIAL SUM Ø7 L

RCL LOAD MA H (JF2) → D 1 PRD MA Ø6 C Ø (JV1) HS1
RCL LOAD PC H (JA1) → D 1 PRD PC Ø6 C Ø (JB1)
RCL LOAD MB H (JC1) → D 1 PRD MB Ø6 C Ø (JS1) JF1
RCL LOAD AC H (HU2) → D 1 PRD AC Ø6 C Ø (JU1) HB2
RCL LOAD MA H (JF2) → D 1 PRD MA Ø7 C Ø (JK2) JN2
RCL LOAD PC H (JA1) → D 1 PRD PC Ø7 C Ø (JE2)
RCL LOAD MB H (JC1) → D 1 PRD MB Ø7 C Ø (JR1) JR2
RCL LOAD AC H (HU2) → D 1 PRD AC Ø7 C Ø (JD2) JJ2

- PRD PARTIAL SUM Ø6 H
PRD AC Ø6(1) H
-PRD PARTIAL SUM Ø6 H
PRD AC Ø6(Ø) H
-PRD PARTIAL SUM Ø7 H
PRD AC Ø7(Ø) H
PRD AC Ø7(1) H
→ JU2 PRD CARRY OK 6-7 L
- PRD PARTIAL SUM Ø7 H

PRD AC Ø6(1) H
PRD MB Ø6(Ø) H
PRD AC Ø6(Ø) H
PRD MB Ø6(1) H
PRD AC Ø7(1) H
PRD MB Ø7(Ø) H
PRD AC Ø7(Ø) H
PRD MB Ø7(1) H
→ JS2 PRD AC-EQ MB 6-7 L

M221
H18
J18

REVISIONS	CHK	CHANGE NO	REV.
		00002	A
		EP12-00015	B
	FV	EP12-00023	C

L. Mercer J. SCANLON 12/15/67
L. GALE 10-17-69
L. GALE 6 JAN 70
GALE 7-2-70

QTY.	DESCRIPTION	PART NO.	ITEM NO.
	PARTS LIST		

UNLESS OTHERWISE SPECIFIED
UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINAL SURFACE QUALITY / REMOVE BURRS AND BREAK SHARP CORNERS
MATERIAL
FINISH

DRN. Joe Ogura DATE 12/13/68
CHK'D J. Scanlon DATE 2/18/69
ENG. L. Gale DATE 2/19/69
PROJ. ENG. L. Gale DATE 2/19/69
PROD. W Call DATE 2/19/69
FIRST USED ON EP12

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE
PRD
PROCESSOR REG.
BITS 6 & 7

SIZE	CODE	NUMBER	REV.
D	BS	EP12-Ø-PRD	C

SHEET 1 OF 1
DIST.

DEC FORM NO DRD 102A

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RCD EN DATA ADD H (JL2)
IOA DATA ADD Ø8 H (HN1)
RCB EN MEM 6-11 H (HV1)
MCS MEM Ø8 H (HL1)
RCC EN PC 2-11 H (HK1)
PRE PC Ø8(1) H
RCD EN RSW 6-11 H (HD2)
CSI RSW Ø8 H (HE2)
RCB EN MA 5-11 H (HR1)
PRE MA Ø8(1) H
RCB EN MB 5-11 H (HP1)
PRE MB Ø8(1) H
PMB BMSC Ø8 H (HF2)
PRE AC Ø8(1) H (HJ1)
RCA SET AC H
→ JT2 → PRE PARTIAL SUM Ø8 L

RCC EN BCL H (JD1)
PRE MB Ø8(Ø) H
PRE AC Ø8(1) H
RCA EN AC 6-11 H (HT2)
PRE AC Ø8(1) H
RCC EN-AC H (JH1)
PRE AC Ø8(Ø) H
RCC EN MQ H (HS2)
MQR MQ Ø8(1) H (HR2)
PMB TMSC Ø8 H (HU1)
RCC EN BSE H (JE1)
PRE MB Ø8(1) H
PRE AC Ø8(Ø) H
→ HP2

PRE CARRY Ø8 L
HH1 ADD HH2 PRE ADDER Ø8 L

RCS EN SHIFT RIGHT H (HE1)
-PRD ADDER Ø7 H (HB1)
RCS EN NO SHIFT H (HJ2)
RCS EN SHIFT LEFT H (HF1)
-PRE ADDER Ø9 H
RCC EN LSW H (HC1)
→ HD1

CSI LSW Ø8 H (HN2)
PRE MA Ø8(1) H
PRE MA Ø8(Ø) H
PRE MA Ø9(Ø) H
PRE MA Ø9(1) H
→ HA1 PRE ADDRESS MATCH 8-9 H

RCD EN DATA ADD H (JL2)
IOA DATA ADD Ø9 H (JP1)
RCB EN MEM 6-11 H (HV1)
MCS MEM Ø9 H (JL1)
RCC EN PC 2-11 H (HK1)
PRE PC Ø9(1) H
RCD EN RSW 6-11 H (HD2)
CSI RSW Ø9 H (JM1)
RCB EN MA 5-11 H (JM2)
PRE MA Ø9(1) H
RCB EN MB 5-11 H (JP2)
PRE MB Ø9(1) H
PMB BMSC Ø9 H (JN1)
PRE AC Ø9(1) H (HJ1)
RCA SET AC H
→ JV2 → PRE PARTIAL SUM Ø9 L

RCC EN BCL H (JD1)
PRE MB Ø9(Ø) H
PRE AC Ø9(1) H
RCA EN AC 6-11 H (HT2)
PRE AC Ø9(1) H
RCC EN-AC H (JH1)
PRE AC Ø9(Ø) H
RCC EN MQ H (HS2)
MQR MQ Ø9(1) H (JJ1)
PMB TMSC Ø9 H (JK1)
RCC EN BSE H (JE1)
PRE MB Ø9(1) H
PRE AC Ø9(Ø) H
→ JH2

CSI LSW Ø9 H (HM2)
PRF CARRY 1Ø L
ADD HK2 PRE ADDER Ø9 L

RCC EN LSW H (HC1)
RCS EN NO SHIFT H (HJ2)
RCS EN SHIFT LEFT H (HL2)
-PRF ADDER 1Ø H
RCS EN SHIFT RIGHT H (HE1)
-PRE ADDER Ø8 H
HM1
→ HV2

PRE REG BUS Ø8 H
RCL LOAD MA H (JF2) → PRE MA Ø8 (HS1, JV1)
RCL LOAD PC H (JA1) → PRE PC Ø8 (JB1)
RCL LOAD MB H (JC1) → PRE MB Ø8 (JF1, JS1)
RCL LOAD AC H (HU2) → PRE AC Ø8 (HB2, JU1)

PRE REG BUS Ø9 H
RCL LOAD MA H (JF2) → PRE MA Ø9 (JN2, JK2)
RCL LOAD PC H (JA1) → PRE PC Ø9 (JE2)
RCL LOAD MB H (JC1) → PRE MB Ø9 (JR2, JR1)
RCL LOAD AC H (HU2) → PRE AC Ø9 (JJ2, JD2)

-PRE PARTIAL SUM Ø8 H
PRE AC Ø8(1) H
-PRE PARTIAL SUM Ø8 H
PRE AC Ø8(Ø) H
-PRE PARTIAL SUM Ø9 H
PRE AC Ø9(Ø) H
PRE AC Ø9(1) H
→ JU2 PRE CARRY OK 8-9 L

-PRE PARTIAL SUM Ø9 H

PRE AC Ø8(1) H
PRE MB Ø8(Ø) H
PRE AC Ø8(Ø) H
PRE MB Ø8(1) H
PRE AC Ø9(1) H
PRE MB Ø9(Ø) H
PRE AC Ø9(Ø) H
PRE MB Ø9(1) H
→ JS2 PRE AC-EQ MB 8-9 L

M221
H19
J19

REVISIONS			
REV.	CHANGE NO.	CHK	
A	00002	Dick	G Munroe, J SCANLON, D Seamlan 10/2/68
B	EP12-00015	Dick	Jack Munroe 12-16-68
C	EP12-00023	FV	L GALE, D Seamlan 1/14/69, F. Quillen 6-30-70, GALE, S Marsh 7-2-70

DEC FORM NO DRD 102A

UNLESS OTHERWISE SPECIFIED	DRN. Joe Arria 12/13/68	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30' FINAL SURFACE QUALITY √ REMOVE BURRS AND BREAK SHARP CORNERS	CHK'D D Seamlan 2/18/69	TITLE PRE PROCESSOR REG. BITS 8 & 9
	ENG. Jack 2/19/69	
	PROJ. ENG. Jack 2/19/69	
	PROD. J Wall 2/18/69	
MATERIAL	FIRST USED ON EP12	SIZE D CODE 85 NUMBER EP12-Ø-PRE REV. C
FINISH	SCALE	
	SHEET 1 OF 1	DIST.

PARTS LIST

QTY.	DESCRIPTION	PART NO.	ITEM NO.

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RCD EN DATA ADD H (JL2)
IOA DATA ADD 1Ø H (HN1)
RCB EN MEM 6-11 H (HV1)
MCS MEM 1Ø H (HL1)
RCC EN PC 2-11 H (HK1)
PRF PC 1Ø (1) H
RCD EN RSW 6-11 H (HD2)
CSI RSW 1Ø H (HE2)
RCB EN MA 5-11 H (HR1)
PRF MA 1Ø (1) H
RCB EN MB 5-11 H (HP1)
PRF MB 1Ø (1) H
PMB BMSC 1Ø H (HF2)
PRF AC 1Ø (1) H (HJ1)
RCA SET AC H
→ JT2

RCC EN BCL H (JD1)
PRF MB 1Ø (Ø) H
PRF AC 1Ø (1) H
RCA EN AC 6-11 H (HT2)
PRF AC 1Ø (1) H
RCC EN-AC H (JH1)
PRF AC 1Ø (Ø) H
RCC EN MQ H (HS2)
MQR MQ 1Ø (1) H
PMB TMSC 1Ø H (HU1)
RCC EN BSE H (JE1)
PRF MB 1Ø (1) H
PRF AC 1Ø (Ø) H
→ JH2

→ HP2

PRF PARTIAL SUM 1Ø L

PRF CARRY 1Ø L

HH1 ADD HH2 PRF ADDER 1Ø L

RCS EN SHIFT RIGHT H (HE1)
-PRE ADDER Ø9 H (HB1)
RCS EN NO SHIFT H (HJ2)
RCS EN SHIFT LEFT H (HF1)
-PRF ADDER 11 H
RCC EN LSW H (HC1)

CSI LSW 1Ø H (HN2)
PRF MA 1Ø (1) H
PRF MA 1Ø (Ø) H
PRF MA 11 (Ø) H
PRF MA 11 (1) H
CSI LSW 11 H (HM2)

→ HA1 PRF ADDRESS MATCH 1Ø-11 H

→ HD1 PRF REG BUS 1Ø H

RCL LOAD MA H (JF2) → D 1 PRF MA 1Ø C Ø (JV1)
RCL LOAD PC H (JA1) → D 1 PRF PC 1Ø C Ø (JB1)
RCL LOAD MB H (JC1) → D 1 PRF MB 1Ø C Ø (JS1)
RCL LOAD AC H (HU2) → D 1 PRF AC 1Ø C Ø (JU1)

RCD EN DATA ADD H (JL2)
IOA DATA ADD 11 H (JP1)
RCB EN MEM 6-11 H (HV1)
MCS MEM 11 H (JL1)
RCC EN PC 2-11 H (HK1)
PRF PC 11 (1) H
RCD EN RSW 6-11 H (HD2)
CSI RSW 11 H (JM1)
RCB EN MA 5-11 H (JM2)
PRF MA 11 (1) H
RCB EN MB 5-11 H (JP2)
PRF MB 11 (1) H
PMB BMSC 11 H (JN1)
PRF AC 11 (1) H
RCA SET AC H (HJ1)
→ JV2

RCC EN BCL H (JD1)
PRF MB 11 (Ø) H
PRF AC 11 (1) H
RCA EN AC 6-11 H (HT2)
PRF AC 11 (1) H
RCC EN-AC H (JH1)
PRF AC 11 (Ø) H
RCC EN MQ H (HS2)
MQR MQ 11 (1) H (JJ1)
PMB TMSC 11 H (JK1)
RCC EN BSE H (JE1)
PRF MB 11 (1) H
PRF AC 11 (Ø) H
→ JH2

CYI CARRY INSERT L

→ HM1 ADD HK2 PRF ADDER 11 L

PRF PARTIAL SUM 11 L

RCC EN LSW H (HC1)
RCS EN NO SHIFT H (HJ2)
RCS EN SHIFT LEFT H (HF1)
FLE LOW END SHIFT IN H (HL2)
RCS EN SHIFT RIGHT H (HE1)
-PRF ADDER 1Ø H

→ HV2 PRF REG BUS 11 H

RCL LOAD MA H (JF2) → D 1 PRF MA 11 C Ø (JK2)
RCL LOAD PC H (JA1) → D 1 PRF PC 11 C Ø (JE2)
RCL LOAD MB H (JC1) → D 1 PRF MB 11 C Ø (JR1)
RCL LOAD AC H (HU2) → D 1 PRF AC 11 C Ø (JD2)

-PRF PARTIAL SUM 1Ø H
PRF AC 1Ø (1) H
-PRF PARTIAL SUM 1Ø H
PRF AC 1Ø (Ø) H
-PRF PARTIAL SUM 11 H
PRF AC 11 (Ø) H
PRF AC 11 (1) H
→ JU2 PRF CARRY OK 1Ø-11 L

-PRF PARTIAL SUM 11 H

PRF AC 1Ø (1) H
PRF MB 1Ø (Ø) H
PRF AC 1Ø (Ø) H
PRF MB 1Ø (1) H
PRF AC 11 (1) H
PRF MB 11 (Ø) H
PRF AC 11 (Ø) H
PRF MB 11 (1) H
→ JS2 PRF AC-EQ MB 1Ø-11 L

D1 M113 K28 F1
E1
PRF ADDER 11 L → PRF ADDER 11 H

M221
H2Ø
J2Ø

REVISIONS			
CHK	CHANGE NO.	REV.	
2nd	00002	A	D Mauss J. SCANLON 12/1/67
2nd	EP12-00015	B	J. Scanlon 12-11-68 L. GALE 12-11-68
FV	EP12-00023	C	J. Scanlon 4-30-70 GALE 4-30-70
			D Mauss 7-2-70

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINAL SURFACE QUALITY / REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL

FINISH

DRN.	Joe Cyr	DATE 12/3/68
CHKD	J. Scanlon	DATE 2/18/69
ENG	L. Gale	DATE 2/19/69
PROJ. ENG	L. Gale	DATE 2/19/69
PROD.	W. Call	DATE 2/19/69

FIRST USED ON: EP12

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: PRF PROCESSOR REG. BITS 1Ø&11

SIZE	CODE	NUMBER	REV.
D	85	EP12-Ø-PRF	C

SCALE

SHEET 1 OF 1

DIST.

DEC FORM NO. DRD 102A

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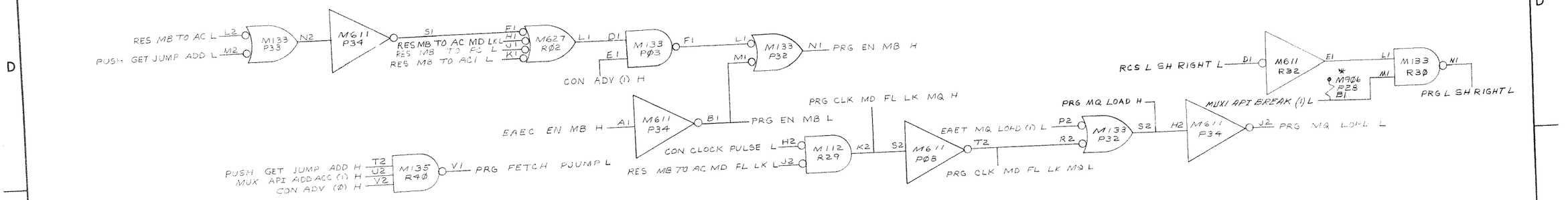

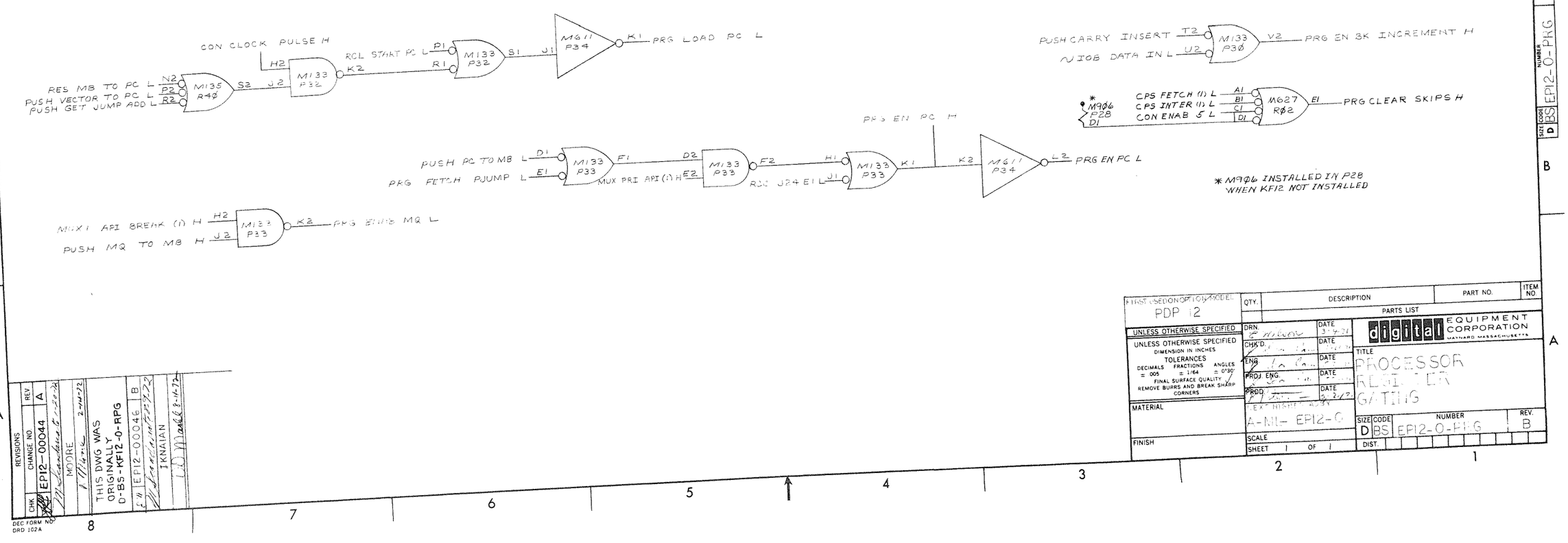

*M906 INSTALLED IN P28 WHEN KF12 NOT INSTALLED

REVISIONS			
CHK	CHANGE NO.	REV	
	EP12-00044	A	Mclaughlin 6-20-72
	MOORE		2-24-72
	THIS DWG WAS ORIGINALLY D-BS-KF12-0-RPG		
	EP12-00046	B	Mclaughlin 8-17-72
	IKNAIAN		Mclaughlin 8-17-72

DEC FORM NO. DRD 102A

FIRST USED ON OPTION/MODEL: PDP 12

QTY.	DESCRIPTION	PART NO.	ITEM NO.
	PARTS LIST		

UNLESS OTHERWISE SPECIFIED

UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINAL SURFACE QUALITY
REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL

FINISH

		DATE
DRN.	[illegible]	3-4-72
CHK'D	[illegible]	DATE
ENG	[illegible]	DATE
PROJ. ENG.	[illegible]	DATE
PROD	[illegible]	DATE 3-27-72

DEC HIGHEST ASSY: A-NL-EP12-0

SCALE

SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: PROCESSOR REGISTER GATING

SIZE	CODE	NUMBER	REV.
D	BS	EP12-0-PRG	B

DIST.

SIZE D | CODE BS | NUMBER EP12-0-PRG | REV B

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INS LJMP H P1
SLA EX TS5 H R1
M113 K30
S1 RCA ENABLE IR 2-7 L
S2 M111 K34 T2 RCA ENABLE IR 2-7 H

INS SET H T2
CPS EXECUTE (1)H U2
CPT TS1 (1)H V2
M115 K29 V1

SLA (DIS+XSK) L P2
INS (L INDEX * B EQ 0) L R2
M113 K30 S2

J2 K2 L2 M115 K29 M2 RCA ENABLE IR 8-11 H

D2 E2 F2 M115 K29 H2
CPS FETCH B (1)H

SLA (DSC*EXECUTE 2) H P1
CPT TS2 (1)H R1
M113 H14 S1
V1 M111 K34 U1 RCA DSC SET AC H

M1 N1 P1 R1 M117 J22 S1 RCA EN AC 0-5 H
PRG EN AC L
RCA T3 ADDS L

PRC MB 04 (0)H R2
PRD MB 06 (1)H S2
PRC MB 04 (1)H T2
PRD MB 06 (0)H U2
M121 J24 V2

P1 SLA OPR1 H R1 M113 J31 S1

RCC BSE EN AC L T2
RCB AC ADDS L U2 V2
M115 J30 V1

RCB (STC+DCA+STA) H A1
CPS EXECUTE (1)H B1
CPT TS3 (1)H C1
+3V J32U1 H D1
CPT TS4 (1)H E1 F1
M160 J28 R1
RCC EN IO BUS H H1
-IOB AC CLEAR H J1
CPT TS5 (1)H K1 L1
SLA MUL GO H M1
-RCC TS COMP AC H N1 P1

S2 M111 K09 T2 RCA (OPR2*TS5) H

SLA OPR2 H P2
CPT TS5 (1)H R2
M113 J31 S2
RCA (OPR2*TS5) L

L2 M2 M112 L10 N2 RCA SET AC H
PRC MB 04 (0)L
L1 M1 M112 L10 N1

SLA OPR1 L M1
SLA L ROTATES L N1
SLA MUL ADD L P1
R1 M117 H30 S1

INS N EQ 02 H T2
SKH H (1)H U2
M113 J31 V2
INS N EQ 17 L N2
INS N EQ 01 L P2
R2 M115 K29 S2

F1 H1 J1 K1 M117 J22 L1 RCA EN AC 6-11 H
PRG EN AC L

INS LDH S1
SLA EX TS4 H U1
INS STH H V1
SLA EX TS3 H U2
M160 J28 V2

U2 M111 K34 V2

SKH H (1)H A1
B1 M113 K28 C1

+3V M34U1 H K2

SLA (ADM+LAM) H L2
SLA EX TS3 H M2
M113 J31 N2
RCA T3 ADDS L

INS MSC H D2
INR IR 07 B (1)H E2
INS N EQ 04 H F2
+3V L22U1 H H2
M117 L22 J2
V1 M111 K09 U1 RCA EN LD MSC 4 H

PRD AC 06 (1)L T2
RCL LOAD MSC 4 H S2
D 1 RCA EN TT INT M216 J29 C 0
V1 V2
CST IO PRESET L U2

RCA EN MSC 4 L
P2
CPT TS5 (1)L R2
M112 L38 S2 RCA EN MSC 4 H

REVISIONS		
CHK	CHANGE NO.	REV.
	EP12-00036	A

DRN. D SHEPARD	DATE 2/20/68	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. J BISONETTE	DATE 2/20/68	
ENG. L GALE	DATE 2/20/68	TITLE REGISTER CONTROL A
PROJ. ENG. D CALL	DATE 2/20/68	
PROD.	DATE	
FIRST USED ON EP12		SIZE D CODE BS NUMBER EP12-0-RCA REV. A
SCALE		
SHEET 1 OF 1		DIST.

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RCB 8 ADDRESS L
RCB 8 JMP ADDRESS L
M113 J25
-RCB EN MB H
INR IR Ø4 (1)H
M115 H22
M113 K28
RCB EN MA Ø-4 H
CYI PC INCREMENT H
-CPTP TP2 H
CPT TS2 (1)H
CPS WC (1)H
CPT TS1 (1)H
RCB (ST+FS EN MA) H
CPT TS4 (1)H
CPS EXECUTE B (1)H
INS JMS H
M160 J26
RCB EN MA 5-11 H
CPS INTER (1)H
CPT TS4 (1)H
M113 J25
RCA ENABLE IR 2-7 L
-CSI (FILLS+EX)MFTSØ H
CPR L MODE H
CPT TS1 (1)H
MEA EN IF H
M117 L13
M113 KØ3
RCB EN IF ADDRESS H
RCB EN IF ADDRESS L
CPS DEFER (1)H
PRA MB Ø1 (1)H
CPT TS1 (1)H
CPR L MODE H
M111 KØ9
RCB EN DF ADDRESS H
RCB EN DF ADDRESS L
RCB (JMP*SAVE PC)L
INS JMS L
M113 H36
V2 RCB (LJMP + JMS) H
CSI (FILL+EX STEP) L
M113 K14
V2 RCB (ST+FS EN MA) H
CSI (KEY FS+SE) H
CST AUTO (1)H
INS 8 JMP L
INS JMS L
M113 J33
K2 RCB (JMP+JMS) H
INR IR ØØ (1)H
INR IR Ø1 (Ø)H
INR IR Ø2 (1)H
INR IR Ø3 (Ø)H
CPT TS4 (1)H
+3V H24V1 H
CPR 8 MODE H
M119 H26
P2 RCB 8 JMP ADDRESS L
INS L JMP H
RCD SAVE PC (1)H
M113 K33
C1 RCB (JMP*SAVE PC)L
INS JMS L
INS STH L
+3V L22V1 H
M117 L22
INS STA L
INS DCA L
INS STC L
M115 K26
M2 RCB (STC+DCA+STA) H
SLA MUL GO H
INS N EQ ØØ H
M113 J25
RCB MUL LOAD AC L
INS 8 JMP H
CPS DEFER B (1)H
CPT TS4 (1)H
SLA MUL ADD H
MQR MQ 11 (1)H
CPT TS1 (1)H
PRG EN MB H
M160 J26
RCB EN MB L
CPS DEFER (1)H
CPR 8 MODE H
-INS 8 JMP H
M115 H22
CPS CA (1)L
M113 J25
INS ADD L
INS ADA L
INS TAD L
M115 K26
RCB AC ADDS H
INS DSC L
INS LOA L
CPT TS4 (1)H
PRG EN MB H(1)H
M115 H22
CPS EXECUTE B (1)H
M113 J25
RCB AC ADDS L
SLA (ADD+STC) H
CPS FETCH B (1)H
INS INDEX CLASS L H
CPS DEFER B (1)H
M160 J26
INS SET H
CPS DEFER B (1)H
M113 J25
CPS DEFER SET L
CPS EXC SET L
M113 L12
-CPR L MODE L
-EAEC INST L
M112 L10
CPT TS1 (1)H
M113 J25
RCB MUL LOAD AC L
N1 RCB TS1 EN MB L
CYI XSK TEST L
M117 H30
V2 RCB EN MB 2-4 H
CPT TS1 (1)H
CPS DEFER (Ø)H
M117 L13
RCB 8 ADDRESS
RCB EN MB L
CYI XSK TEST L
RCB MUL LOAD AC L
RCB TS1 EN MB L
M119 H26
V2 RCB EN MB 5-11 H
RCB 8 JMP ADDRESS L
RCD EN AC N-6 L H
CST EN MEM (1)H
INS STH H
M115 H22
M113 H21
S2 RCB EN MEM 6-11 H
CSI FILLS H
CST MFTSØ H
CST STEP EXAM (Ø)H
IOB DATA IN H
CPS BREAK (1)H
CPS T BREAK (1)H
LIP TAPE OUT H
CPS EXECUTE B (1)H
M160 J27
R1 RCB GO MEM TS3 L
CPS INTER (Ø)H
CPT TS3 (1)H
CST EN MEM (1)H
M117 H30
V2 RCB EN MEM Ø-5 H
RCA EN AC 6-11 H
CST EN MEM (1)H
INS STH H
M115 H22
RCB EN MB Ø-1 H

REVISIONS		
CHK	CHANGE NO.	REV.
JB	EP12-00001	A
	ADS	
	J SCANLAN 3/13/69	
NR	EP12-00015	B
	K.COTE 10/14/69	
	J.SCANLAN 10/17/69	
TC	EP12-00023	C
	D SOUTHER 6/30/70	
	D MACKLIN 7/2/70	
KN	EP12-00036	D

DRN. D SHEPARD	DATE 2/20/69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. J DiSONETE	DATE 2/20/69	
ENG. L GALE	DATE 2/20/69	TITLE REGISTER CONTROL B
PROJ. ENG. L GALE	DATE 2/20/69	
PROD. D CALL	DATE 2/20/69	
FIRST USED ON EP12		SIZE D | CODE 85 | NUMBER EP12-Ø-RCB | REV. D
SCALE		
SHEET 1 OF 1		DIST.

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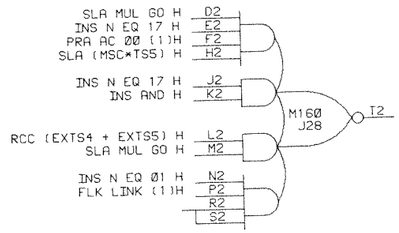

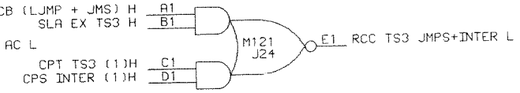

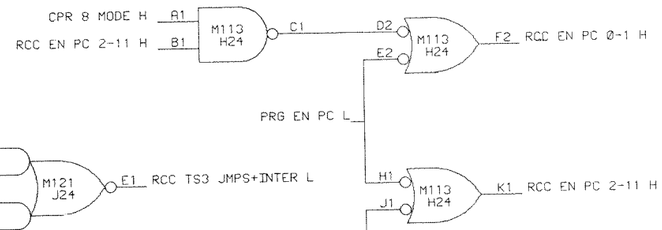

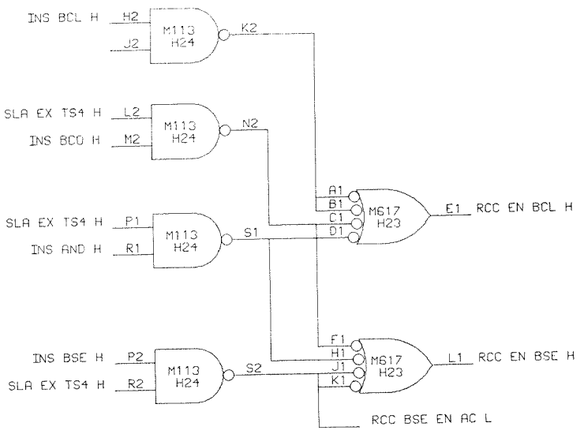

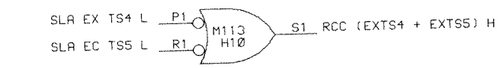

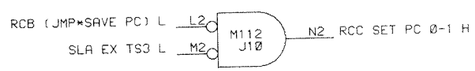

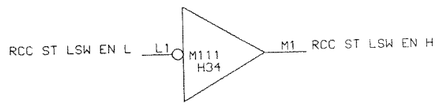

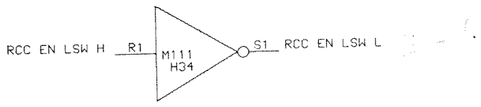

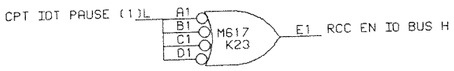

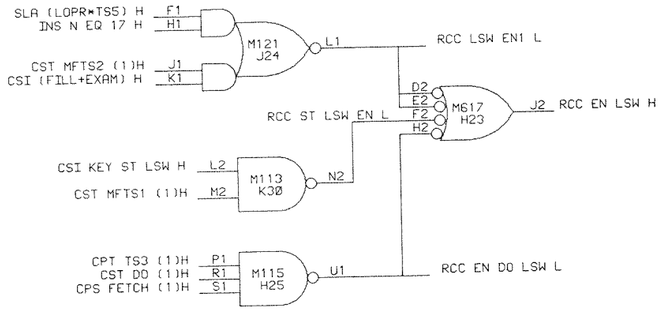

REVISIONS		
CHK	CHANGE NO.	REV.
	EP12-0000	A
	ADS	
	J SCANLON	
	EP12-00036	B

DRN. D SHEPARD	DATE 2/20/69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. J BISONETE	DATE 2/20/69	
ENG. L GALE	DATE 2/20/69	TITLE REGISTER CONTROL C
PROJ. ENG. L GALE	DATE 2/20/69	
PROD. D CALL	DATE 2/20/69	
FIRST USED ON EP12		SIZE D / CODE BS / NUMBER EP12-Ø-RCC / REV. B
SCALE		DIST.
SHEET 1 OF 1		

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INS SAM H P1
CPT TS5 B (1)H R1
M113 K22
S1
K2 L2 M2 N2
M617 K23
P2 RCD EN A D H

CPS BREAK SET H H2
CPT TS1 (1)H J2
M113 L12
K2
R2 S2 T2 U2
M617 H23
V2 RCD EN DATA ADD H

CPT TS3 (1)H P1
LIP TAPE OUT H R1
CPS T BREAK (1)H S1
M115 K26
U1
LIP CHK SUM TO AC L
LIP TAPE BUS TO AC L
R2 S2 T2 U2
M617 K23
V2 RCD EN TAPE BUS H

CPS TAPE SET H H1
CPT TS1 (1)H J1
M113 L12
K1

TSS UF (Ø)H V1
M111 H34
U1
PRE MB ØS (1)L T2
U2
M112 L1Ø
V2
RCA (OPR2*TS5) H L2 M2
CPT TS3 (1)H N2
-RCB GO MEM TS3 H P2
CPS FETCH (Ø)H R2
CST EN MEM (Ø)H S2
M16Ø K21
T2
H1 J1
M113 K22
K1 RCD EN RSW Ø-5 H

RCA EN AC 6-11 H A1
INS STH H B1
CST EN MEM (Ø)H C1
M115 K26
D1

CST MFTSØ H D2
CST STEP EXAM (Ø)H E2
CSI FILLS H F2
CPT TS3 (1)H H2
SLA (LOPR*TS5) H J2
INS N EQ 16 H K2

RCD EN AC N-6 L H E1
INS STH H F1
CST EN MEM (Ø)H H1
M115 K26
J1
H2 J2
M113 K22
K2 RCD EN RSW 6-11 H

CPT TS3 (1)H D2
IOB DATA IN H E2
CPS BREAK (1)H F2
M115 K26
H2
PUSH VECTOR TO PC L
K2 L2 M2 N2
M617 J23
P2 RCD EN DATA BITS H

SLA (MSC*TS5) L H1
INS N EQ 15 L J1
M112 L1Ø
K1 RCD EN RELAYS H

CPT IO PRESET L K2
D 1 RCD SAVE PC M216 C J12 Ø
T2
RCA ENABLE IR2-7 H S2
V1 V2

INS MSC H F1
INS N EQ Ø6 H H1
J1
CPT TS5 B (1)H K1
M117 L39
L1 U2

+3V L40U1 H U2
D 1 RCD EN T TRAP M216 M39 C Ø
PRB AC Ø3 (1)H T2
RCL LOAD MSC 4 H S2
V2 V1
CST IO PRESET L K2

INS STH H D2
CPS EXECUTE B (1)H E2
SKH H (Ø)H F2
CPT TS3 (1)H H2
M117 J22
J2
L1 M1
M113 K22
N1 RCD EN AC N-6 L H

INS SHD H K1
RCC (EXTS4 + EXTS5) H L1
SKH H (Ø)H M1
M115 K26
N1
L2 M2
M113 K22
N2 RCD EN AC N-6 R H

INS LDH H K2
CPS EXECUTE B (1)H L2
CPT TS4 (1)H M2
SKH H (Ø)H N2
M117 J22
P2

REVISIONS		
CHK	CHANGE NO.	REV.
JB	EP12-00001	A
	ADS	
	J. SCANLAN 3/13/69	
PD	EP12-00002	B
	A.WASHINGTON 6/20/69	
	J. SCANLAN 6/22/69	
	EP12-00003	C
	A WASHINGTON 6/19/69	
	L GALE 6/20/69	
	EP12-00036	D

DRN. D. SHEPARD	DATE 2/20/69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D J.BISONETE	DATE 2/20/69	
ENG. L. GALE	DATE 2/20/69	TITLE REGISTER CONTROL D
PROJ. ENG. L. GALE	DATE 2/20/69	
PROD. D. CALL	DATE 2/20/69	
FIRST USED ON EP12		SIZE D CODE BS NUMBER EP12-Ø-RCD REV. D
SCALE		
SHEET 1 OF 1		DIST.

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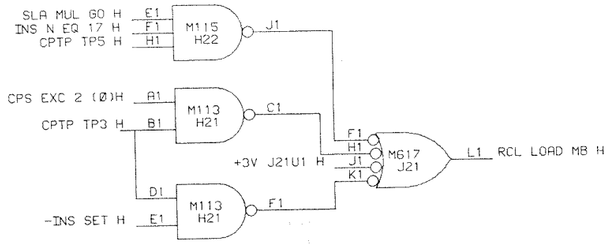

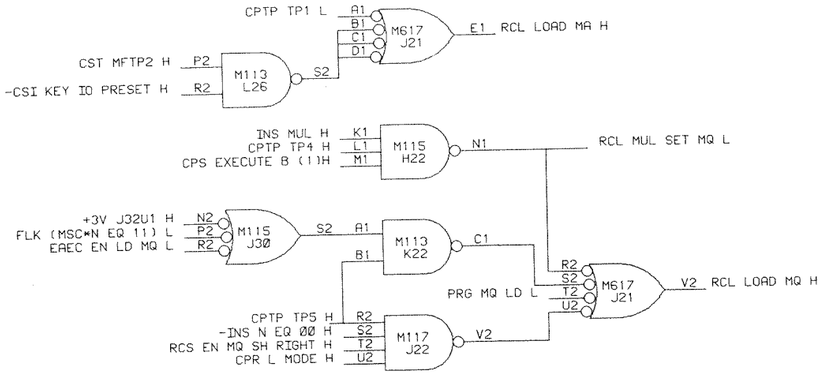

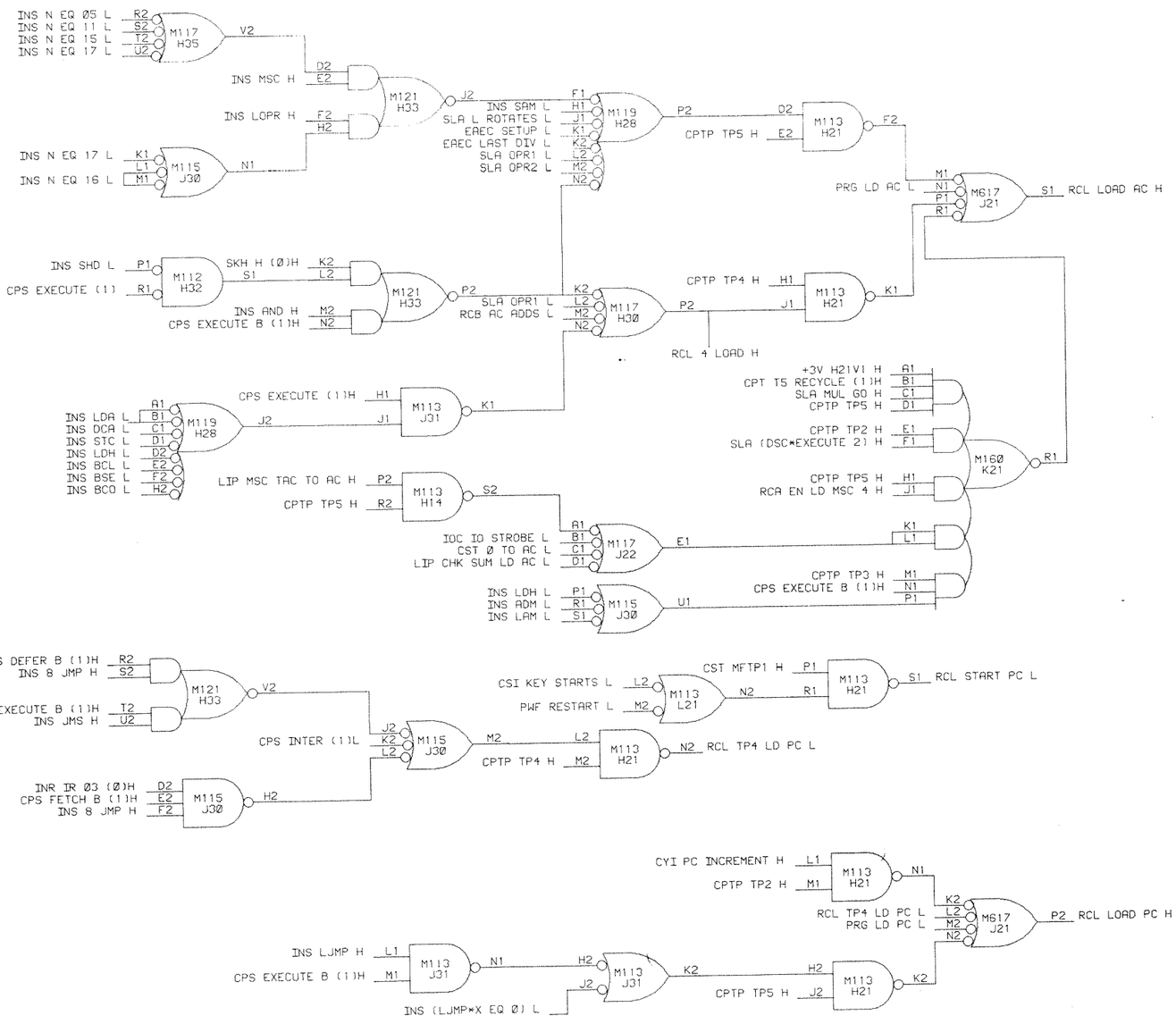

REVISIONS			REVISIONS		
CHK	CHANGE NO.	REV.	CHK	CHANGE NO.	REV.
	EP12-00001	A	NR	EP12-00016	E
	ADS			K.COTE 11-12-69	
	J SCANLAN 3/13/69			J.SCANLAN 11-14-69	
NR	EP12-00006	B	TC	EP12-00023	F
	A WASHINGTON 8/17/69			D SOUTHER 6/23/70	
	L GALE 8/20/69			D MACKLIN 7/2/70	
NR	EP12-00007	C	D/N	EP12-00036	H
	A WASHINGTON 8/6/69			K. Cote Field Test	
	J SCANLAN 8/6/69				
	EP12-00015	D			
	K COTE 10/14/69				
	J SCANLAN 10/17/69				

DRN. D SHEPARD	DATE 2/20/69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. J BISONETE	DATE 2/20/69	
ENG. L GALE	DATE 2/20/69	TITLE PROCESSOR REGISTER LOAD CONTROL
PROJ. ENG. L GALE	DATE 2/20/69	
PROD. D CALL	DATE 2/20/69	
FIRST USED ON EP12		SIZE D CODE 8S NUMBER EP12-Ø-RCL REV. H
SCALE		DIST.
SHEET 1 OF 1		

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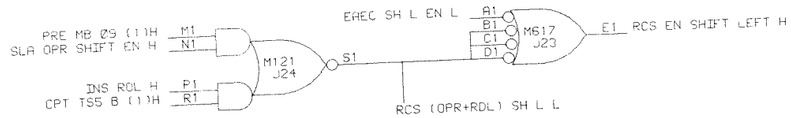

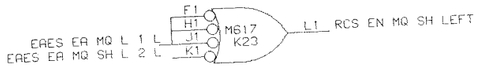

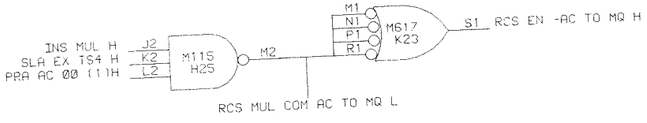

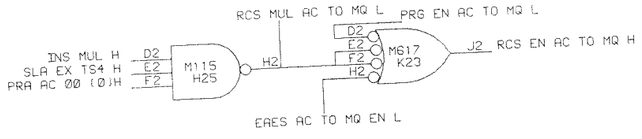

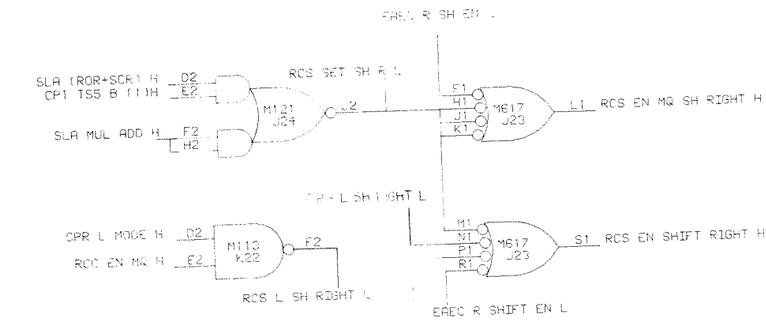

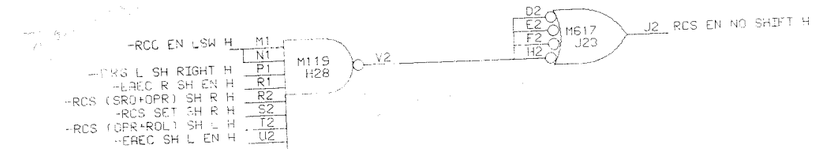

REVISIONS		
CHK	CHANGE NO.	REV.
	EP12-00036	A
	EP12-00046	B
	IKNAIAN	

DRN. D SHEPARD	DATE 2/20/69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. J BISONETE	DATE 2/20/69	TITLE REG SHIFT & MQ INPUTS
ENG. L GALE	DATE 2/20/69	
PROJ. ENG. L GALE	DATE 2/20/69	
PROD.	DATE	
FIRST USED ON EP12	SIZE D	CODE BS
SCALE	NUMBER EP12-Ø-RCS	REV. 1
SHEET 1 OF 1	DIST.	

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SKL I SENSE L
INS SKP L
INS SXL L
SKL X SENSE L
M112 H32
M112 H32
INR IR Ø7 B (1)H
INS SKP H
INR IR Ø7 B (Ø)H
INR IR Ø7 B (Ø)H
INS SXL H
INR IR Ø7 B (1)H
M16Ø K37
T2 SKH L FETCH SKIP L

SKL LINC EX SKIP L
M115 J3Ø
D1
INS ISZ H
CPS EXECUTE B (1)H
PRA CARRY ØØ H
+3V K33U1 H
IOC IOP SAMPLE (1)H
IO8 IO SKIP H
M16Ø K31
T2
M111 K34
PRE MB Ø8 (Ø)H
SLA OPR2 H
PRE MB Ø8 (1)H
+3V K33U1 H
D1
SKH SKIP M216 J29
E1
F1
A1
SKH CLR SKIPS L

FLK LINK (1)H
PRD MB Ø7 (1)H
PRA AC ØØ (1)H
PRC MB Ø5 (1)H
M121 H33
L1
SLA OPR2 H
M113 J31
F2
PRA AC ØØ (Ø)H
PRA AC Ø1 (Ø)H
PRB AC Ø2 (Ø)H
PRB AC Ø3 (Ø)H
M117 H3Ø
M111 K34
P1
PRD MB Ø6 (1)H
M115 H31
V1 SKH AC EQ Ø L
SKH LOW AC EQ Ø H
CPTP TP3 H
CPS EXECUTE B (1)H
INS ISZ H
M115 K35
S2
IOC*IO STROBE H
SKH SKIP (Ø)H
CPTP TP4 H
SLA OPR2 H
M121 H33
S1
M115 J3Ø
J1

PRC AC Ø4 (Ø)H
PRC AC Ø5 (Ø)H
PRD AC Ø6 (Ø)H
PRD AC Ø7 (Ø)H
PRE AC Ø8 (Ø)H
PRE AC Ø9 (Ø)H
PRF AC 1Ø (Ø)H
PRF AC 11 (Ø)H
M119 J32
M111 K34
R2

SKH LINC EX SKIP L
SKL LINC EX SKIP H
CPS EXECUTE B (1)H
M113 K33
K2
SKH L FETCH SKIP L
M115 H22
D1
INS SHD H
CPS EXECUTE B (1)H
M113 K33
N2
CPTP TP5 H
M113 K33
S1
CPTP TP4 H
CPS DEFER B (1)H
CPR L MODE H
PRA MB ØØ (1)H
M117 H3Ø
L1
F2
SKH H M216 J29
H2
J2
SKH CLR SKIPS L

M9Ø5 PØ2
CPS FETCH (1)L
CPS INTER (1)L
M113 K33
S2
PRG CLEAR SKIPS H
CPTP TP3 H
-CSI KEY CONT H
CST MFTPØ H
M16Ø J27
V2 SKH CLR SKIPS L

REVISIONS			REVISIONS		
CHK	CHANGE NO.	REV.	CHK	CHANGE NO.	REV.
JB	ØØØØT	H	TC	EP12-ØØØ23	C
	ADS			D SOUTHER 5/3Ø/7Ø	
				D MACKLIN 7/2/7Ø	
	J.SCANLAN 3-13-69			EP12-ØØØ36 D	
	EP12-ØØØØ6 B				

DRN. D L SHEPARD	DATE 2-2Ø-69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
CHK'D. J.BISONETTE	DATE 2-2Ø-69	TITLE SKIP FF & H BIT	
ENG. L.GALE	DATE 2-2Ø-69		
PROJ. ENG. L.GALE	DATE 2-2Ø-69		
PROD. D.CALL	DATE 2-2Ø-69		
FIRST USED ON EP12		SIZE D / CODE BS / NUMBER EP12-Ø-SKH / REV. D	
SCALE		DIST.	
SHEET 1 OF 1			

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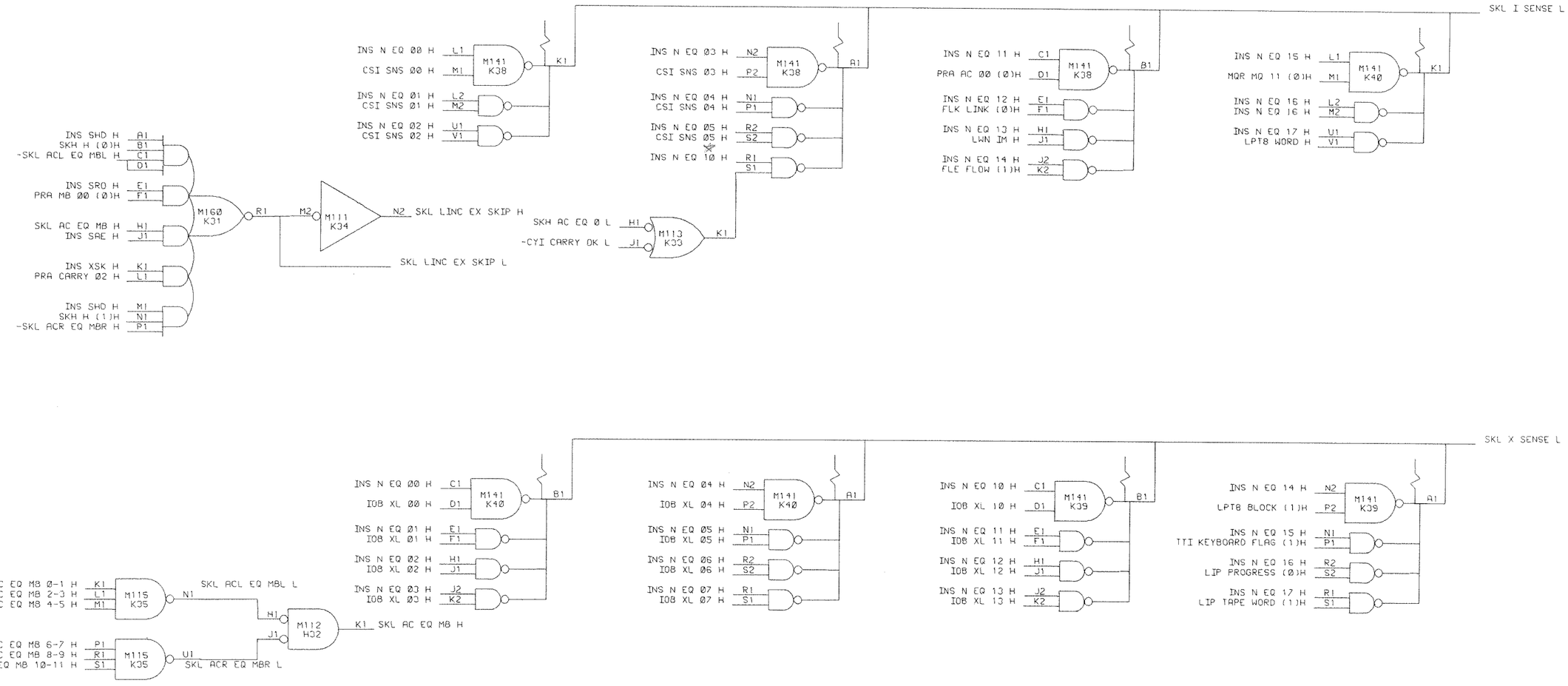

REVISIONS		
CHK	CHANGE NO.	REV.
JB	EP12-00001	A
	ADS	
	J SCANLAN 3/13/69	
	EP12-00003	B
	A WASHINGTON 6/17/69	
	L GALE 6/20/69	
	EP12-00016	C

* for Ø6 & Ø7 see F 12-C-COL

DRN. D SHEPARD	DATE 2/20/69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D J BISONETE	DATE 2/20/69	
ENG. L GALE	DATE 2/20/69	TITLE EP12 SKIPS
PROJ. ENG. L GALE	DATE 2/20/69	
PROG. D CALL	DATE 2/20/69	
FIRST USED ON EP12		SIZE D | CODE BS | NUMBER EP12-Ø-SKL | REV. C
SCALE		DIST.
SHEET 1 OF 1		

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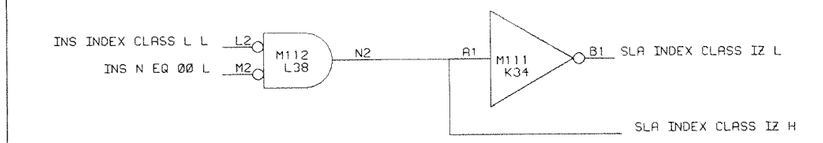

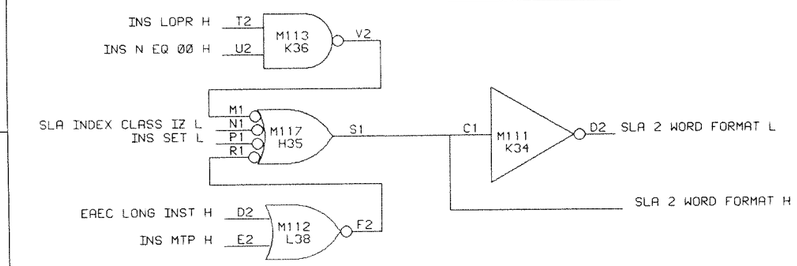

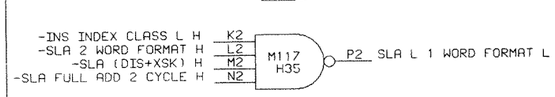

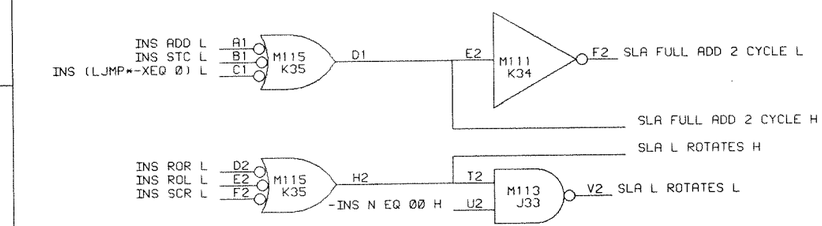

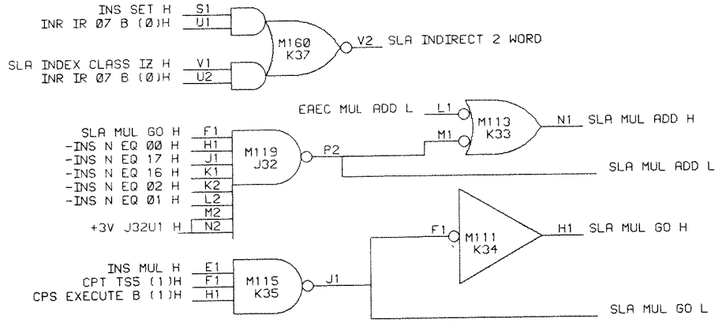

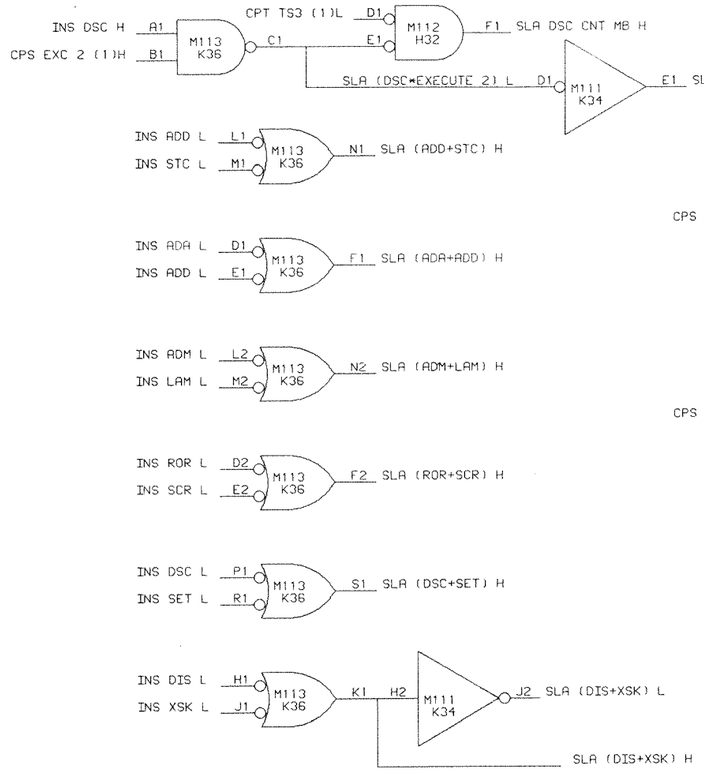

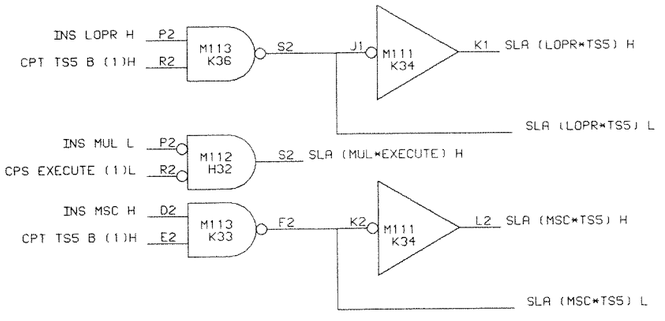

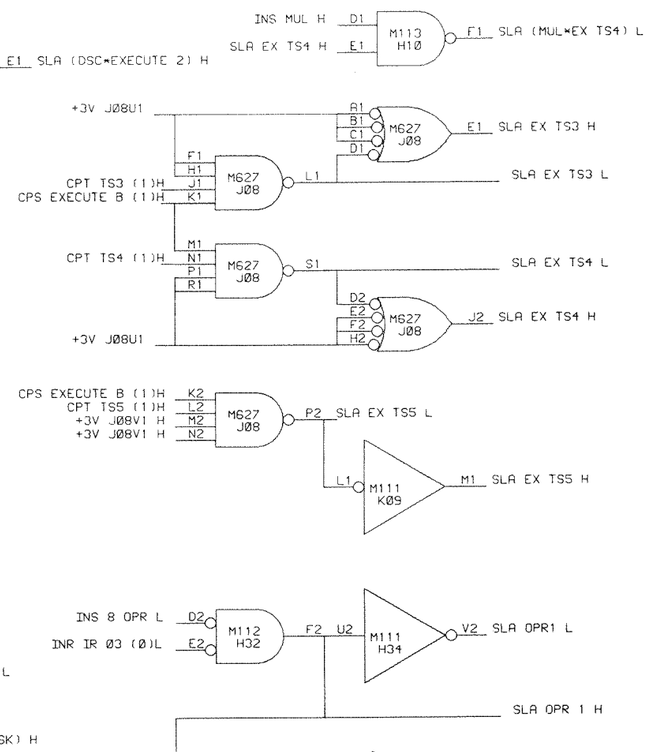

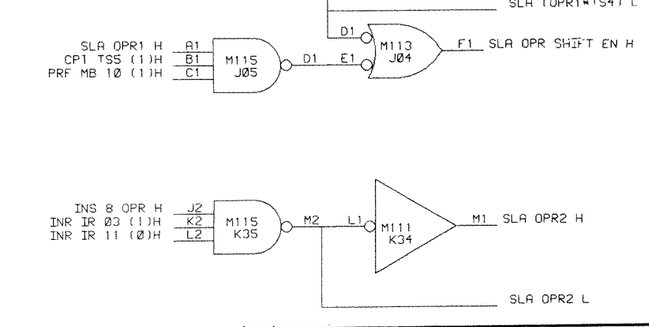

REVISIONS		
CHK	CHANGE NO.	REV.
TC	EP12-00023	A
	Norma Swisher 6-30-70	
	S Mack 7-2-70	

DRN. C.L. SHUART	DATE 2-20-69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. J.F. BISONETTE	DATE 2-20-69	
ENG. L. GALE	DATE 2-20-69	TITLE SPECIAL LEVELS 1
PROJ. ENG. L. GALE	DATE 2-20-69	
PROD. L. CALL	DATE 2-20-69	
FIRST USED ON EP12		SIZE D / CODE 85 / NUMBER EP12-0-SLA / REV. A
SCALE		
SHEET 1 OF 1		DIST.

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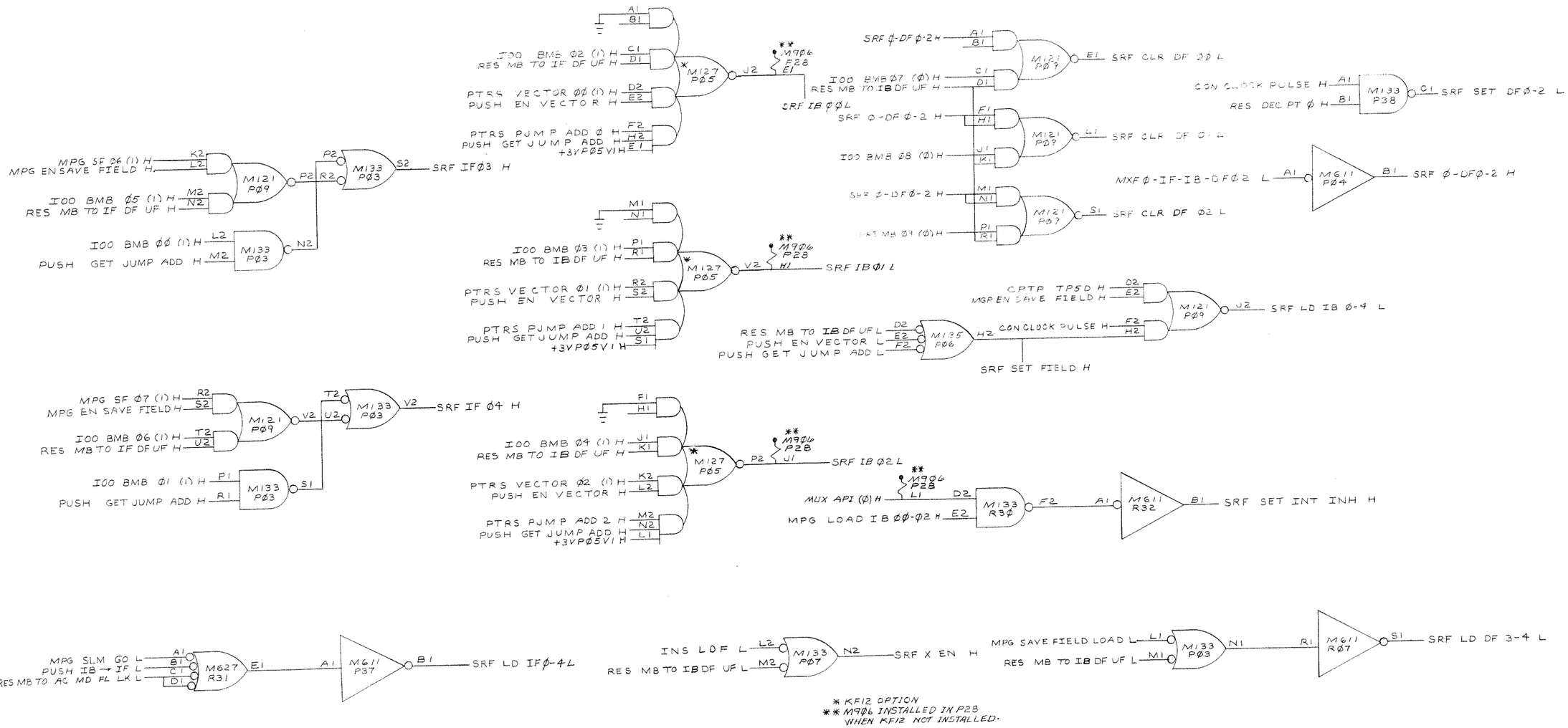

* KF12 OPTION
** M9Ø6 INSTALLED IN P28 WHEN KF12 NOT INSTALLED.

REVISIONS	REV	CHK
CHANGE NO. EP12-00044	A	
MOORE 2-24-72		
THIS DWG WAS ORIGINALLY D-BS-KF12-0-SRF		

DEC FORM NO. DRD 102-B

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP 12		PARTS LIST		

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES

DECIMALS	ANGLES
.XXX = .005	±0° 30'
.XX = .02	
.X = .1	

REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓

MATERIAL

FINISH

DRN. E Wilson	DATE 3-5-71	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
CHK'D. Jon Pa...	DATE	
ENG. Jon Pa...	DATE	
PROJ. ENG. Jon Pa...	DATE	
PROD. K Pa...	DATE	

NEXT HIGHER ASSY. A-ML-EP12-0

SCALE

SHEET 1 OF 1

TITLE: SET & RESTORE FIELDS

SIZE	CODE	NUMBER	REV.
D	BS	EP12-0-SRF	A

DIST.

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TTI TT Ø L
TTI TT1 L
TTI TT2 L
TTI TT3 L
TTI TT4 L
TTI TT5 L
TTI TT6 L
TTI TT7 L
TTI SKIP L
MK2
MR2
MS2
ML1
MM1
MP2
MT2
MN2
NH2
ND2
IOC IOP 1H
TTI KEYBOARD SELECT H
+3V
TTI STROBE H
TTI REC PRESET L
TTI DATA H
MR1
TTI Ø
TTI 1
TTI 2
MK1
MJ2
TTI 3
TTI 4
TTI 5
TTI 6
TTI 7
KEYBOARD FLAG (1) H
MF2
KEYBOARD FLAG (Ø) H
TTI SHIFT H
+3V

+3V
TTI START ENABLE L
+3V MØBU1H
TTO TTI CLOCK H
NR1
NS2
TTI REC PRESET L

TTI KEYBOARD SELECT H
IOC IOP 2 H
NJ2
NE2
TTI TT AC CLEAR L
+3V
ND1
ME2
TTI KCC L
IOC IO PRESET H
NF2
+3V
TTI SETUP L

TTI CLOCK SCALE 2 (1) H
NU1
TTI IN ACTIVE (1) H
TTI SHIFT L
NK2
MS1
TTI SHIFT H

READ BUSSY
ML2
PL2
TTI KEYBOARD SELECT H
IOC IOP 4 H
+3V
TTI STROBE H

WØ76
NØ2
E2
NM2
ST
TELETYPE SERIAL INPUT
MM2
TTI SHIFT H
TTI SPIKE DETECTOR (1) H
TTI DATA H
+3V

PRB MB Ø3 (Ø) H
PRC MB Ø4 (Ø) H
PRC MB Ø5 (Ø) H
PRD MB Ø6 (Ø) H
PRD MB Ø7 (1) H
PRE MB Ø8 (1) H
MD2
ME1
MF1
MH1
MH2
MJ1
+3V
MP1
+3V MØBU1H
TTI KEYBOARD SELECT H

TTI KEYBOARD FLAG (1) L
H2
J2
M113
MØ8
K2
TTI KEYBOARD FLAG (1) H

M7Ø6
MØ6
NØ6

TTI IN ACTIVE (1) L
TTI IN LAST UNIT (1) L
TTI START ENABLE L
TTI TTI 7 (Ø) H
TTI SHIFT H
TTI IN LAST UNIT
NR2
TTI IN STOP 2 (1) L
TTO TTI CLOCK H
MN1
TTI CLOCK SCALE Ø
TTI CLOCK SCALE 1
TTI CLOCK SCALE 2
NT2
NS1
TTI START ENABLE L
NP2
TTI IN STOP 1
NU2
TTI IN STOP 2
NV2
TTI REC PRESET L
NS2
TTI IN ACTIVE
NN2
TTI SETUP L
-TTI SHIFT H
TTI SPIKE DETECTOR (1) H
TTI SPIKE DETECTOR (Ø) H
TTI KCC L
MV2
TTI READER RUN
NL2
MU2
WØ76
NØ2
M2
READER ENABLE
TTI SHIFT L
TTI IN LAST UNIT (1) H
+3V

REVISIONS	REV.	CHANGE NO.	CHK
	A	00002	MB
	B	EP12-00015	MB

J. SCANLON 5/12/67
L. GALE 11/17/69

QTY.	DESCRIPTION	PART NO.	ITEM NO.
	PARTS LIST		

UNLESS OTHERWISE SPECIFIED
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINAL SURFACE QUALITY √
REMOVE BURRS AND BREAK SHARP CORNERS
MATERIAL
FINISH

		DATE
DRN.		1-6-68
CHK.		2-18-69
ENG.		2/14/69
PROJ. ENG.		2/19/69
PROD.		2/19/69

FIRST USED ON EP12
SCALE
SHEET OF

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE
TTI TELETYPE RECEIVER

SIZE	CODE	NUMBER	REV.
D	85	EP12-Ø-TTI	B

DIST.

DEC FORM NO. DRD 102A

EP12-Ø-TTI B D 85 NUMBER SIZE CODE REV.

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PRB MB Ø3(Ø) H ME2
PRC MB Ø4(Ø) H ME1
PRC MB Ø5(Ø) H MF2
PRD MB Ø6(1) H MF1
PRD MB Ø7(Ø) H MH2
PRE MB Ø8(Ø) H MJ2
+3V NJ1 H NJ1

TTO SELECT H
MN1
+3V MØBU1
MS1
IOC IOP4 H
MR1

+3V MØBU1 MN2
MP2 PRC AC Ø4(1) H
MR2 PRC AC Ø5(1) H
ML2 PRD AC Ø6(1) H
MM2 PRD AC Ø7(1) H
MU2 PRE AC Ø8(1) H
MS2 PRE AC Ø9(1) H
MT2 PRF AC 1Ø(1) H
MU1 PRF AC 11(1) H

TTO ENB (MK2, ML1)
TTO Ø
TTO 1
TTO 2
TTO 3
TTO 4
TTO 5
TTO 6
TTO 7
MJ1

TTO SHIFT H
TTO PRESET L

TTO OUT ACTIVE (Ø) L
TTO LINE (MD2)
MV2 TTO MAGNET DRIVER H
FAIL OUT
PAIR OPEN COL
DRIVER OUTPUT

M7Ø7
MØ7
NØ7

TTO = Ø L
MH1
+3V
TTO OUT ACTIVE (1) L

TTO OUT ACTIVE (1) L
+3V MØBU1 NS2
- TTO SHIFT L

TTO OUT ACTIVE (1) H
TTO FREQ DIV (NP2)
- TTO CLOCK H

TTO OUT STOP 1 (NR2)
TTO OUT STOP 1.5 (NP1)
TTO OUT STOP 2 (NN1)

TTO OUT STOP 2 (Ø) H NN2
TTO ENB (1) H MK1
TTO OUT ACTIVE (1) H
- TTO = Ø H

TTO OUT ACTIVE (1) L
TTO OUT ACTIVE (1) H
MD1
TTO OUT ACTIVE

TTO = Ø L
TTO SHIFT H
TTO TPR FLG (NK2)
IOC IOP1 H
NH2
NJ2 TTO SKIP L
TTO SELECT H

+3V
TTO SHIFT H

TTO MAGNET DRIVER H
+5V
-15V
-30V
W Ø7G
NØ2

CLK 880 HZ
J2
M2
N2
L2
K2 TTO CLOCK L
P2
R2 TTO TTI CLOCK H
M452
NØ8

TTI SKIP L
M113 MØ8
TTO SKIP L

IOC IO PRESET H NE2
+3V
TTO PRESET L
+3V MØBU1 NF2
+3V
TTO SELECT H
IOC IOP 2 H ND2

RCA EN
TT INT (Ø) H
TTI KEYBOARD FLAG (1) L H1
TTO TPR FLG (1) L J1
M113 MØ8
TTO TT INT L

REVISIONS | REV | CHANGE NO. | CHK

DEC FORM NO. DRD 102A

UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINAL SURFACE QUALITY
REMOVE BURRS AND BREAK SHARP CORNERS
MATERIAL
FINISH

QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST			

		DATE
DRN.		12-27-68
CHK'D.		2-18-69
ENG.		2/19/69
PROJ. ENG.		2/14/69
PROD.		2/18/69

FIRST USED ON EP12
SCALE
SHEET OF

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE
TTO TELETYPE TRANSMITTER

SIZE D | CODE 85 | NUMBER EP12-Ø-TTO | REV.
DIST.

REV | NUMBER EP12-Ø-TTO | SIZE D | CODE 85

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SIGNAL NAME	FROM PIN	TO PIN	COLOR	REMARKS
GROUND	N01B1	N40C2	BLACK	
	N01C1	N02C2		
	N01V1	N40T1		
	N01U1	M40T1		
	N01T1	M40C2		
	N01S1	M02C2		WIRE IS
	N01R1	M02T1		#24 AWG
	N01N1	L40C2		
	N01M1	L01T1		
	N01L1	L01C2		
	N01K1	K40T1		
	N01J1	K40C2		
	N01H1	K01T1		
	N01F1	K01C2		
	N01E1	J40T1		
	N01D1	J40C2		
	N01P1	L40T1		
	M01U1	J01C2		
	M01T1	J18T1		
	M01S1	J18C2		
	M01R1	H40T1		
	M01P1	H40C2		
	M01N1	H01T1		
	M01V1	J01T1		
	M01M1	H01C2		
	M01L1	H18T1		

REVISIONS			
REV.	DATE	CHG. NO.	APP'D.
A	11-21-69	EP12-00017	JS.
B	6-22-71	EP12-00041	RM

DRN. R. Kingsbury	DATE 3/11/69	
CHK'D. R. Kingsbury	DATE 3/11/69	
ENG. L. Gale	DATE 3/10/69	
PROJ. ENG. L. Gale	DATE 3/10/69	
PROD. D. Call	DATE 3/10/69	
FIRST USED ON		
SCALE		
SHEET 1 OF 3		

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
GENERAL WIRING SHEET
FOR
D C POWER PROCESSOR LOGIC

SIZE	CODE	NUMBER	REV.
A	WL	EP12-0-4	B

DIST.

DEC FORM NO. DRA 104

SIGNAL NAME	FROM PIN	TO PIN	COLOR	REMARKS
GROUND	M01K1	H18C2	BLACK	
+10v	N01E2	N27A2	GREEN	
+5v	N01B2	N40A2	RED	
	M01V2	M40A2		
	M01U2	M04A2		WIRE IS
	M01T2	L40A2		#24 AWG
	M01S2	L03A2		
	M01R2	K40A2		
	M01P2	K03A2		
	M01N2	J40A2		
	M01M2	J18A2		
	M01L2	J03A2		
	M01K2	H40A2		
	M01J2	H18A2		
	M01H2	H03A2		
	M01F2	N28A2		
	M01E2	J09A2		
	M01D2	K18A2		
	M01C2	L18A2		
	M01B2	M18A2		
	M01A2	N12A2		
-15v	N01L2	N33B2	BLUE	
	N01K2	N02B2	BLUE	
	N01J2	N03B2	BLUE	

REVISIONS			
REV.	DATE	CHG. NO.	APP'D.

DRN. R. Kingsbury	DATE 3/11/69	
CHK'D. R. Kingsbury	DATE 3/11/69	
ENG. L. Gale	DATE 3/10/69	
PROJ. ENG. L. Gale	DATE 3/10/69	
PROD. D. Call	DATE 3/10/69	
FIRST USED ON		
SCALE		
SHEET 2 OF 3		

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
GENERAL WIRING SHEET
FOR
DC POWER PROCESSOR LOGIC

SIZE	CODE	NUMBER	REV.
A	WL	EP12-0-4	B

DIST.

DEC FORM NO. DRA 104

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SIGNAL NAME	FROM PIN	TO PIN	COLOR	REMARKS
-30v	NO1P2	NO2V2	YELLOW	
-30v	NO1S2	NO3V2	YELLOW	
				WIRE IS
+5 VOLTS	MØ1T2	PØ3A2	RED	#24 AWG
	MØ1N2	P27A2		
	MØ1F2	R4ØA2		
	MØ1R2	R21A2		
	MØ1V2	RØ1A2		
GND	NØ1H1	P22C2	BLACK	
	NØ1P1	P4ØC2		
	NØ1T1	RØ1T1		
	NØ1M1	R2ØT1		
	M4ØT1	P4ØT1		

REVISIONS			
REV.	DATE	CHG. NO.	APP'D.

DRN. KINGSBURY	DATE 3/69	
CHK'D. KINGSBURY	DATE 3/69	
ENG. L. GALE	DATE 3/69	
PROJ. ENG. L. GALE	DATE 3/69	
PROD. D. CALL	DATE 3/69	
FIRST USED ON		
SCALE		
SHEET 3 OF 3		

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
GENERAL WIRING SHEET
FOR
D C POWER PROCESSOR LOGIC

SIZE	CODE	NUMBER	REV.
A	WL	EP12-0-4	B

DIST.

DEC FORM NO.
DRA 104

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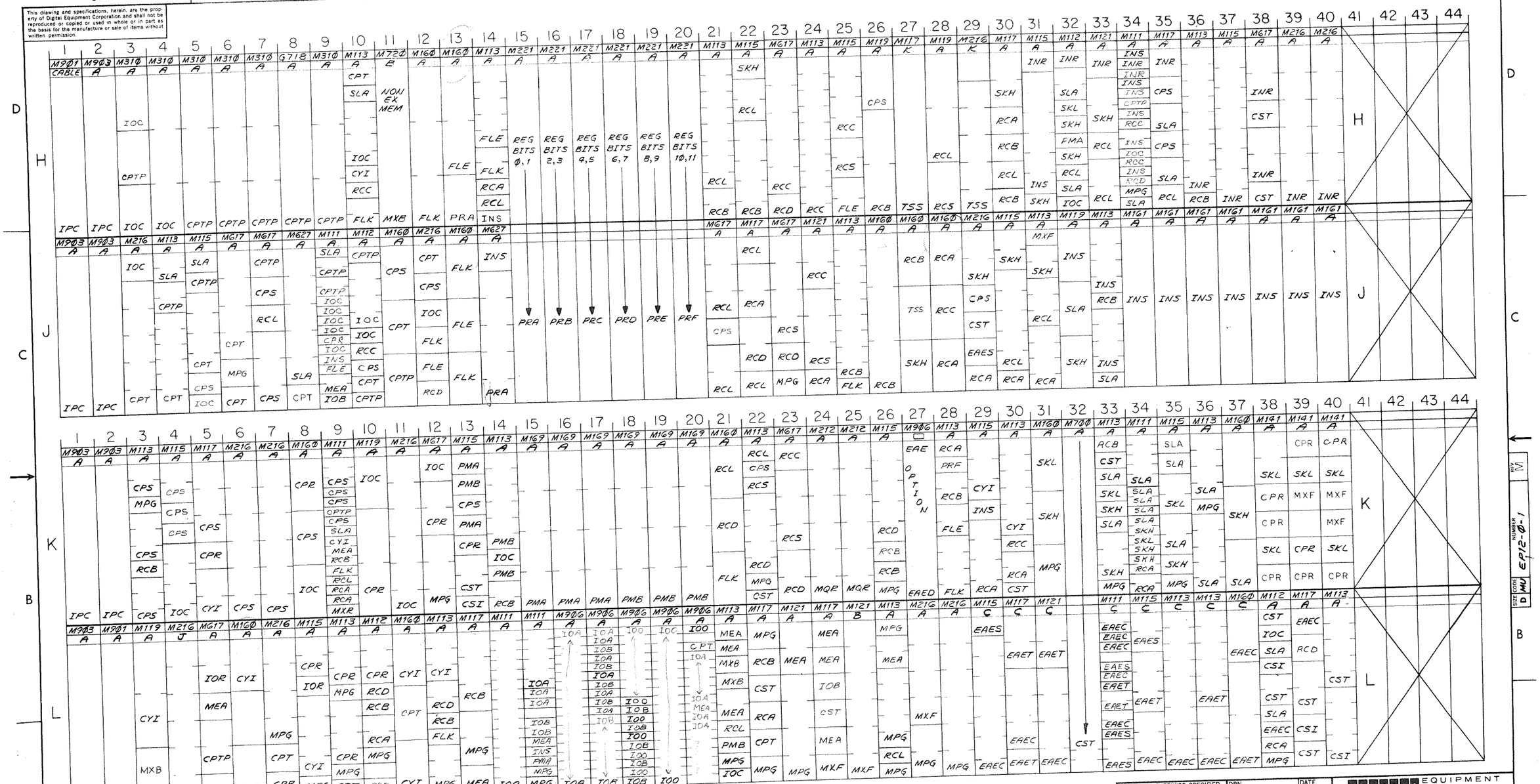

A = EP12
B = MC12
C = KE12
D = ASR33
E = DP12A
F = XY12
H = VC12
J = DR12
K = KT12

REVISIONS					
REV.	CHANGE NO.	CHK			
A	RELEASED UNDER REV 'A' 3/1/69		J SCANLON	2/20/69	
B	00002		D MACKLIN	11-17-70	
C	EP12-00003		R TKNAIAN	11-4-71	
D	EP12-00007		GALE	6/20/68	
E	EP12-00016		GALE	11-6-69	
F	EP12-00027		GALE	9-30-70	
G	EP12-00030		GALE	9/8/70	
H	EP12-00035		D MACKLIN	11-17-70	
J	EP12-00043		R TKNAIAN	11-4-71	
K	EP12-00044		R MOORE	2-25-72	
L	EP12-00045		M DOKE	11-17-72	
M	EP12-00046		R TKNAIAN	1-3-73	
N			R TKNAIAN	1-11-73	

UNLESS OTHERWISE SPECIFIED	DRN.	DATE 10-23-68
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30' FINAL SURFACE QUALITY REMOVE BURRS AND BREAK SHARP CORNERS	CHK	DATE 2/11/69
	ENG.	DATE 2/19/69
	PROJ. ENG.	DATE 12/6/69
	PROD.	DATE 1/5/70
MATERIAL	NEXT HIGHER ASSY. PDP-12	
FIRST USED ON OPTION / MODEL	FINISH	SCALE
		SHEET 1 OF 2

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: MODULE UTILIZATION PROCESSOR

SIZE D | CODE MU | NUMBER EP12-0-1 | REV. M | DIST.

DEC FORM NO. ORD 105

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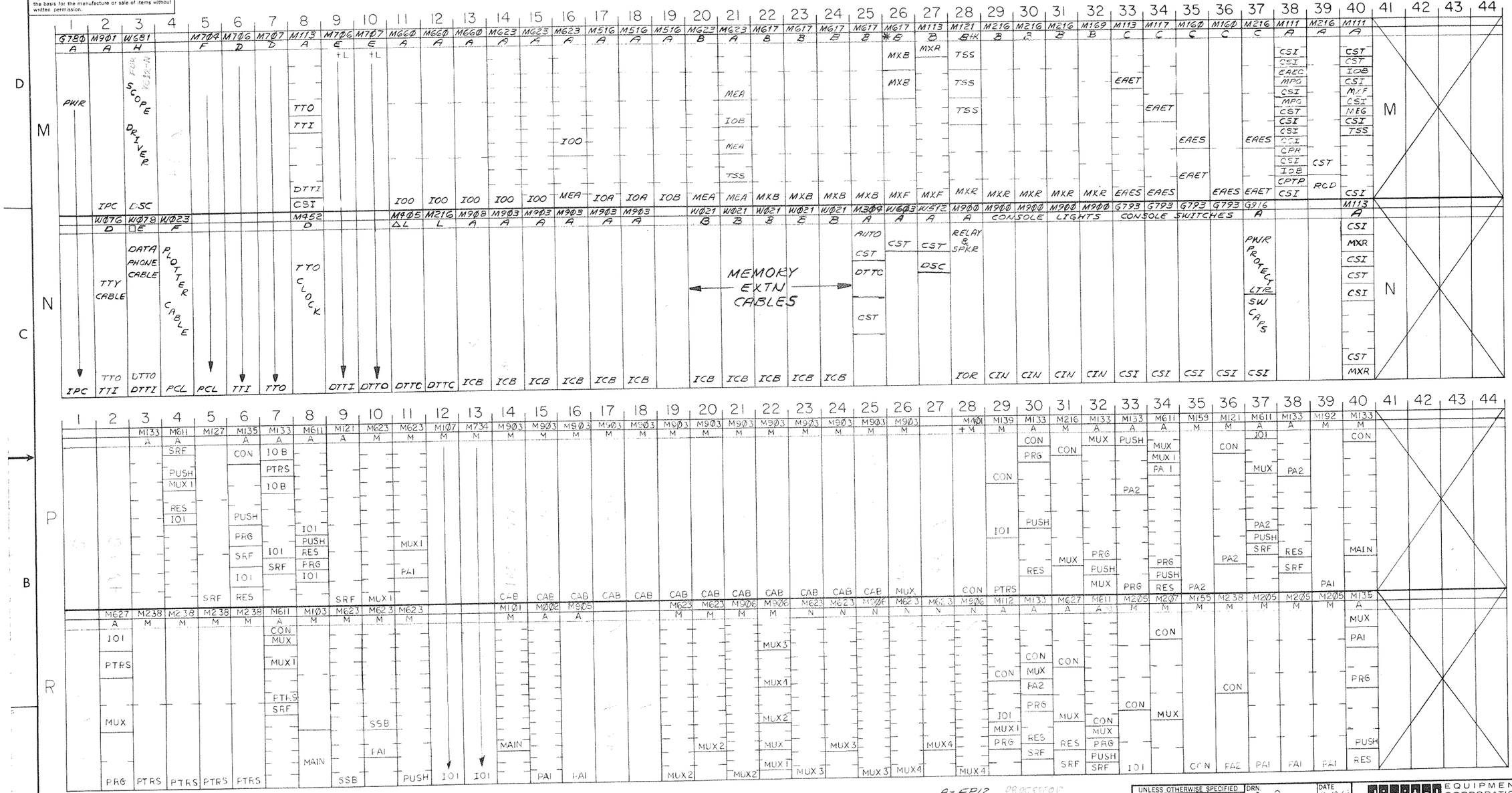

* WHEN THE MC12 IS NOT INSTALLED USE A W023 WITH PINS J2, P2, V2, GROUNDED.

□ USE W076 FOR DP12A, M820 FOR DP12B. WHEN NEITHER CARD INSTALLED USE G700YA.

△ = USE A G718 FOR DP12A

\+ INSERT M906 WHEN KF12 NOT INSTALLED.

A = EP12 PROCESSOR
B = MC12 MEM EXTD
C = KE12 EAE ARITH
D = ASR33 TTY
E = DP12A DATA PHONE
F = KY12 DATA PHONE
H = VC12 LOCAL PLOTTER
J = DP12 SERIAL PROTOCOL
K = KT12 CLOCK
L = DP12 B TIME SHARE
M = KF12 EXTD ARITHMETIC (EAE)
N = DM12 PWR FAIL INTERFACE

REVISIONS	REV
CHANGE NO	
CHK	ORIGINALLY WAS DWG C-MU-EP12-0-2

UNLESS OTHERWISE SPECIFIED	DRN.	DATE 10-12-67
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES DECIMALS .005 FRACTIONS 1/64 ANGLES ± 0°30' FINAL SURFACE QUALITY REMOVE BURRS AND BREAK SHARP CORNERS	CHK	DATE 11/15/67
	ENG.	DATE 11/16/67
	PROJ. ENG.	DATE 1/4
MATERIAL	PROD	DATE 3/24
FINISH	FIRST USED ON PDP-12	
	SCALE	
	SHEET 2 OF 2	

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: MODULE UTILIZATION PROCESSOR

SIZE D | CODE MU | NUMBER EP12-0-1 | REV M | DIST.

SIZE D | CODE MU | NUMBER EP12-0-1

DEC FORM NO. DRD 105

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY J. APREA	CHECKED J. SCANLON	SECTION	
DATE 10/29/68	DATE 2/18/69		
ENG L. GALE	PROD D. CALL	ISSUED SECT.	
DATE 2/19/69	DATE 2/10/69		

ITEM NO.	DWG NO./PART NO.	DESCRIPTION	EP12	MC12	KE12	DP12A	DP12B	XY12	VC12N	DR12	KT12	KF12	DM12	
	G700YA	DATAPHONE DISABLE				1	1							
	G718	TIMING JUMPER	1			1								
	G780	CONTROL FOR 739 POWER SUPPLY	1											
	M002	15 LOADS	1											
	M101	BUS DATA INTERFACE										1		
	M103	DEVICE SELECTOR										1		
	M107	DEVICE SELECTOR										1		
	M111	INVERTER	8		1									
	M112	NOR GATE	5											
	M113	NAND GATE	23											
	M115	NAND GATE	11		2									
	M117	NAND GATE	9		2						1			
	M119	NAND GATE	5											
	M121	AND/NOR GATE	4	2	1							1		
	M127	2-2-2-3 AND/NOR GATE										1		
	M133	10-2 INPUT NAND GATES	7											
	M135	8-3 INPUT NAND GATES	2											
	M139	3-8 INPUT NAND GATES										1		
	M141	NAND/OR GATES	3											
	M155	4 TO 16 LINE DECODER										1		
	M159	ADDER										1		

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO.
MODULE COUNT	D-MU-EP12-Ø-1	A	PL	EP12-Ø-1	M	EP12-00016
	SHEET 1 OF 3	DIST.				

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY J. APREA	CHECKED J. SCANLON	SECTION	
DATE 10/29/68	DATE 2/18/69		
ENG L. GALE	PROD D. CALL	ISSUED SECT.	
DATE 2/19/69	DATE 2/10/69		

ITEM NO.	DWG NO./PART NO.	DESCRIPTION	EP12	MC12	KE12	DP12A	DP12B	XY12	VC12N	DR12	KT12	KF12	DM12	
	M160	AND/NOR GATE	12		3									
	M161	BINARY TO OCTAL/DECIMAL DECODER	7											
	M169	GATING MODULE	6		1									
	M192	2-8 BIT PRIORITY ENCODERS										1		
	M205	5 "D" FLIP-FLOPS										4		
	M207	J-K FLIP-FLOPS										1		
	M212	SHIFT REGISTER	2											
	M216	FLIP FLOP	14	3	1		1			1	1	1		
	M221	PROC. REGISTER	6											
	M238	SYNCHRONOUS 4 BIT UP/DN COUNTER										5		
	M304	PULSE AMPLIFIER	1											
	M310	DELAY LINE	6											
	M401	VARIABLE CLOCK										1		
	M405	CRYSTAL CLOCK					1							
	M452	VARIABLE CLOCK	1											
	M516	POSITIVE BUS RECEIVER	3											
	M611	HIGH SPEED POWER INVERTER	6											
	M617	FOUR-INPUT POWER NAND GATE	8	5										
	M623	BUS DRIVER	5									7	4	
	M627	NAND POWER AMPLIFIER	4											
	M660	POSITIVE LEVEL DRIVER	3											

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO.
MODULE COUNT	D-MU-EP12-Ø-1	A	PL	EP12-Ø-1	M	
	SHEET 2 OF 3	DIST.				

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY	J. APREA	CHECKED J. SCANLON	SECTION
DATE	10/29/68	DATE 2/18/69	
ENG	L. GALE	PROD D. CALL	ISSUED SECT.
DATE	2/19/69	DATE 2/10/69	

ITEM NO.	DWG NO./PART NO.	DESCRIPTION	QUANTITY/VARIATION											
			EP12	MC12	KE12	DP12A	DP12B	XY12	VC12N	DR12	KT12	KF12	DM12	
	M700	MANUAL FUNCTION TIMING	1					1						
	M704	PLOTTER CONTROL				1	1							
	M706	TELETYPE RECEIVER	1			1	1							
	M707	TELETYPE TRANSMITTER	1			1	1							
	M720	NON EXISTANT MEM.		1										
	M734	I/O BUS INPUT MULTIPLEXER										1		
	M906	CABLE TERMINATOR	5									2	2	
	M908	RIBBON CONNECTOR	1											
	W023	I/O CABLE CONNECTOR	1											
	W078	TTY INTERFACE	1											
	W512	POSITIVE LEVEL CONVERTER	1											
	W603	POSITIVE LEVEL AMP							1					
	W681	SCOPE INTENSIFIER	1											
	G916	POWER PROTECT	1											
	M905	SELECTOR BOARD												

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	FCO NO.
MODULE COUNT	D-MU-EP12-Ø-1	A	PL	EP12-Ø-1	M	
	SHEET 3 OF 3	DIST.				

DEC FORM DEC 16-(325)-1031-N870
DRA 110

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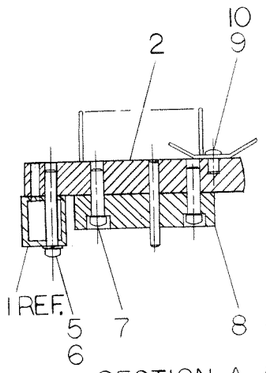
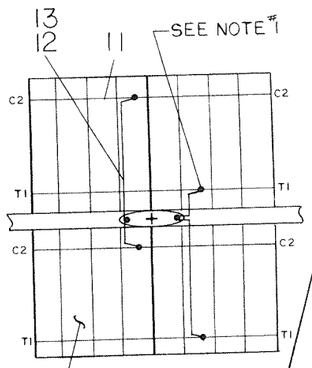


SECTION A-A
SCALE 1/1

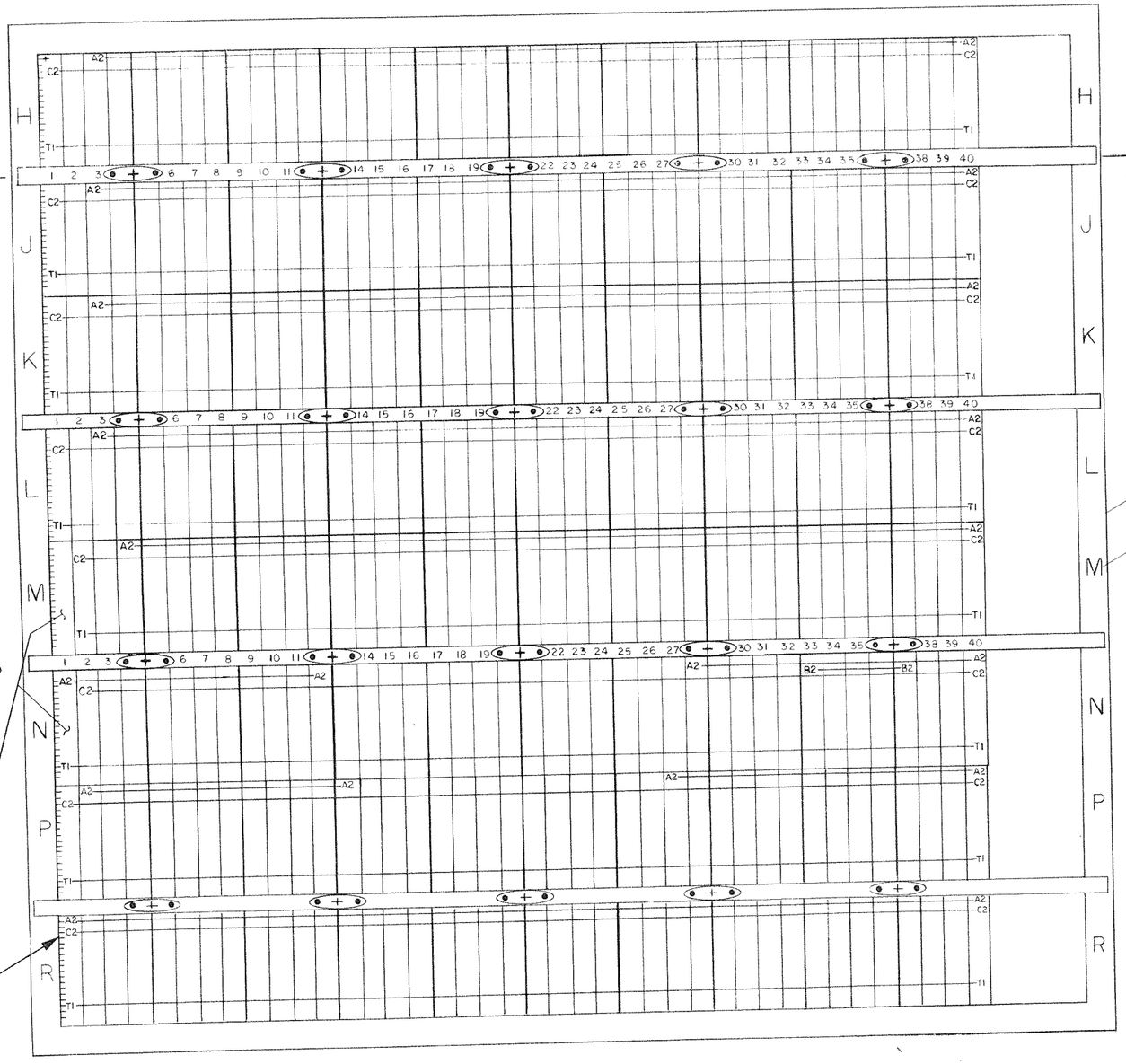


DETAIL A
15 PLACES
SEE NOTE #2

SEE DETAIL B

SEE NOTE #3

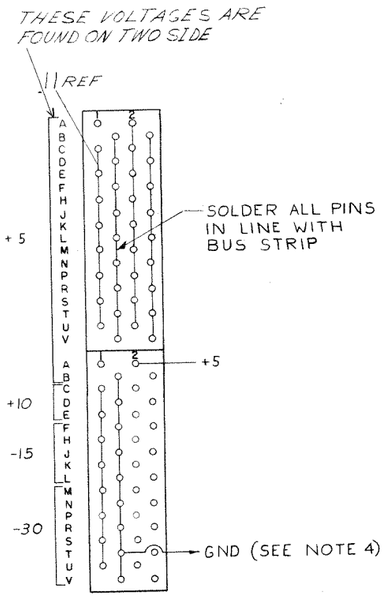
SEE DETAIL A



NOTES:

1. CONNECTIONS ON ITEMS #11 & #12 TO BE SOLDERED AND LOCATED AT MINIMUM PRACTICAL HEIGHT ABOVE BOARD.
2. ALL CONN BLOCKS TO BE GROUNDED TO GND LUGS AS SHOWN.
3. USE YELLOW WIRE (ITEM #3) FOR MACHINE WRAPPED & BLUE WIRE (ITEM #4) FOR HAND WRAPPED WIRE.
4. PINS ON SIDE #1 OF MØ1 & NØ1 ARE GND.

THESE VOLTAGES ARE FOUND ON TWO SIDE



MEN ØI
DETAIL B

REVISIONS												
CHK	CHANGE NO	REV										
	12-11-68	A	12-00004									
	Betty Wade 2-13-69	B	12-00007									
	S. ZNAMIEROWSKI 2/26/69	C	12-00009									
	Rosemary Wade 3/6/69	D	12-00010									
	J. Powell 3/12/69	E	EP12-00002									
	CLAYTON 3/21/69	F	EP12-00008									
	S. ZNAMIEROWSKI 3-0-69	G	EP12-00014									
	ZNAMIEROWSKI 3/4/69	H	EP12-00017									
	Rosemary Wade 3/4/69	J	EP12-00036									
	GALE 3/11/69	K	EP12-00041									
	J. Powell 3/13/69	L	EP12-00045									
	GALE 3/19/69	M										
	J. Powell 3/19/69	N										
	GALE 3/25/69	P										
	J. Powell 3/25/69	R										
	L. GALE 12/4/67	S										
	J. Powell 12/4/67	T										
	SCANLON 1/5/67	U										
	J. Powell 1/5/67	V										
	L. GALE 8/28/68											
	L. GALE 7-29-68											
	J. SCANLON 6-28-71											
	J. Powell 6-28-71											
	M. MOORE 6-28-71											
	J. Powell 6-28-71											
	J. KNAIAN 8-11-72											
	J. Powell 8-11-72											

DEC FORM NO.
DRD 100

FIRST USED ON OPTION/ MODEL:	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP12		PARTS LIST		

UNLESS OTHERWISE SPECIFIED	DRN.	DATE 1-16-69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30' FINAL SURFACE QUALITY REMOVE BURRS AND BREAK SHARP CORNERS	CHK'D J. Powell	DATE 1-3-69	TITLE LOGIC FRAME ASSY (EP12)
	ENG.	DATE	
	PROJ. ENG.	DATE 1-6-69	
	PROD.	DATE 1/7/69	
MATERIAL	NEXT HIGHER ASSY. A-ML-EP12-0		SIZE D CODE AD NUMBER 7005976-0-0 REV M
FINISH	SCALE NONE		DIST.
	SHEET 1 OF 1		

AD7005976-0-0 M

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY G. GIANOULIS	CHECKED K. RUSS	SECTION 1
DATE 9/16/68	DATE 12/30/68	
ENG [signature]	PROD [signature]	ISSUED SECT. 1
DATE 1/7/69	DATE 1/7/69	

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	QUANTITY / VARIATION
1	D-IA-7407207-0-0	LOGIC FRAME	1
2	D-IA-7406100-0-0	MTG BAR	4
3	9105740-5	#30 AWG SOLID TEF INS WIRE YELLOW	A/R
4	9105740-7	#30 AWG SOLID TEF INS WIRE BLUE	A/R
5	9008210	SCR PH HD PAN #8-32 x 1 SST W/NYLON PATCH	8
6	9006634	WASHER INT TOOTH #8	8
7	9006120	SCR PHL HD FIL POSI DRIVE #8-32 x 5/8 CPS	80
8	E-SC-1205348-0-0	288 PIN CONN BLOCK	40
9	9006121	SCR PHL HD FIL POSI DRIVE #8-32 x 3/8 CPS	20
10	9007597	TERMINAL #2116-08-00 SHAKIPROOF	20
11	1205541	STRIP, BUS	A/R
12	9107560-1	#22 AWG WIRE BUS	A/R
13	9107265	TUBING TEFLON #22 WHT	A/R
14	A-DC-7406370-0-0	LOGIC FRAME DECALS	A/R
REF	K-ML-EP12-0-3	WIRE LIST	

TITLE LOGIC FRAME ASSY (EP12)	ASSY NO. D-AD-7005976-0-0	SIZE A	CODE PL	NUMBER 7005976-0-0	REV M	ECO NO. EP12-00046
	SHEET 1 OF 1	DIST. 6				

DEC FORM NO.
DRA 110

MASTER DRAWING LIST

DWG. NO.	REV. LET.	NO. OF SHEETS	TITLE
D-AD-7005979-0-0	J	1	WIRED ASSY MEMORY (EM12)
A-PL-7005979-0-0	J	1	WIRED ASSY MEMORY (PARTS LIST) EM12
D-MU-EM12-0-1	S	1	MODULE UTILIZATION RACK A-D
D-MU-EM12-0-2	M	1	MODULE UTILIZATION RACK E-F
A-PL-EM12-0-1	S	1	MODULE UTILIZATION RACK A-D (PARTS LIST)
A-PL-EM12-0-2	M	1	MODULE UTILIZATION RACK E-F (PARTS LIST)
K-WL-EM12-0-3	AA		WIRE LIST
A-WL-EM12-0-4	B	3	POWER WIRE LIST
D-BS-EM12-0-IPCM	J	1	INTER PROC CABLES
D-BS-EM12-0-MCS	A	1	MCS SENSE AMPS & INHIBIT DRIVERS
D-BS-EM12-0-MCT	C	1	MEMORY CONTROL
D-BS-EM12-0-MCX	B	1	X-AXIS SELECTION
D-BS-EM12-0-MCY	B	1	Y-AXIS SELECTION
A-ML-PDP12-0	REF.		PDP-12 SYSTEM

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REVISIONS

REV.	DATE	CHG. NO.	APP'D.
AK	10/71	00054	R.M.
AL	12/71	00055	R.M.
AM	6/72	00057	D.M.
AN	8/72	00058	R.I.

DRN.	J.Aorea	DATE 3/7/69
CHK'D.	R.Hutnak	DATE 3/10/69
ENG.	L.Gale	DATE 3/10/69
PROJ. ENG.	L.Gale	DATE 3/10/69
PROD.	D.Call	DATE 3/10/69

FIRST USED ON PDP-12

SCALE

SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE BASIC 4K MEMORY

SIZE	CODE	NUMBER	REV.
A	ML	EM12-0	AN

DIST. X

DEC FORM NO. DRA 103

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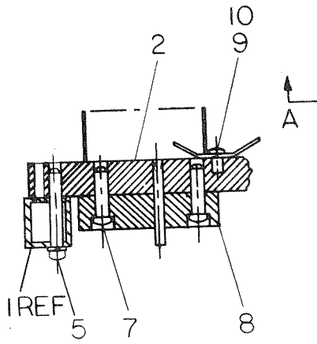
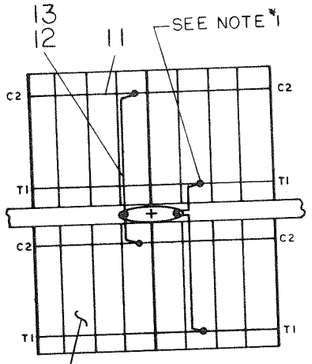
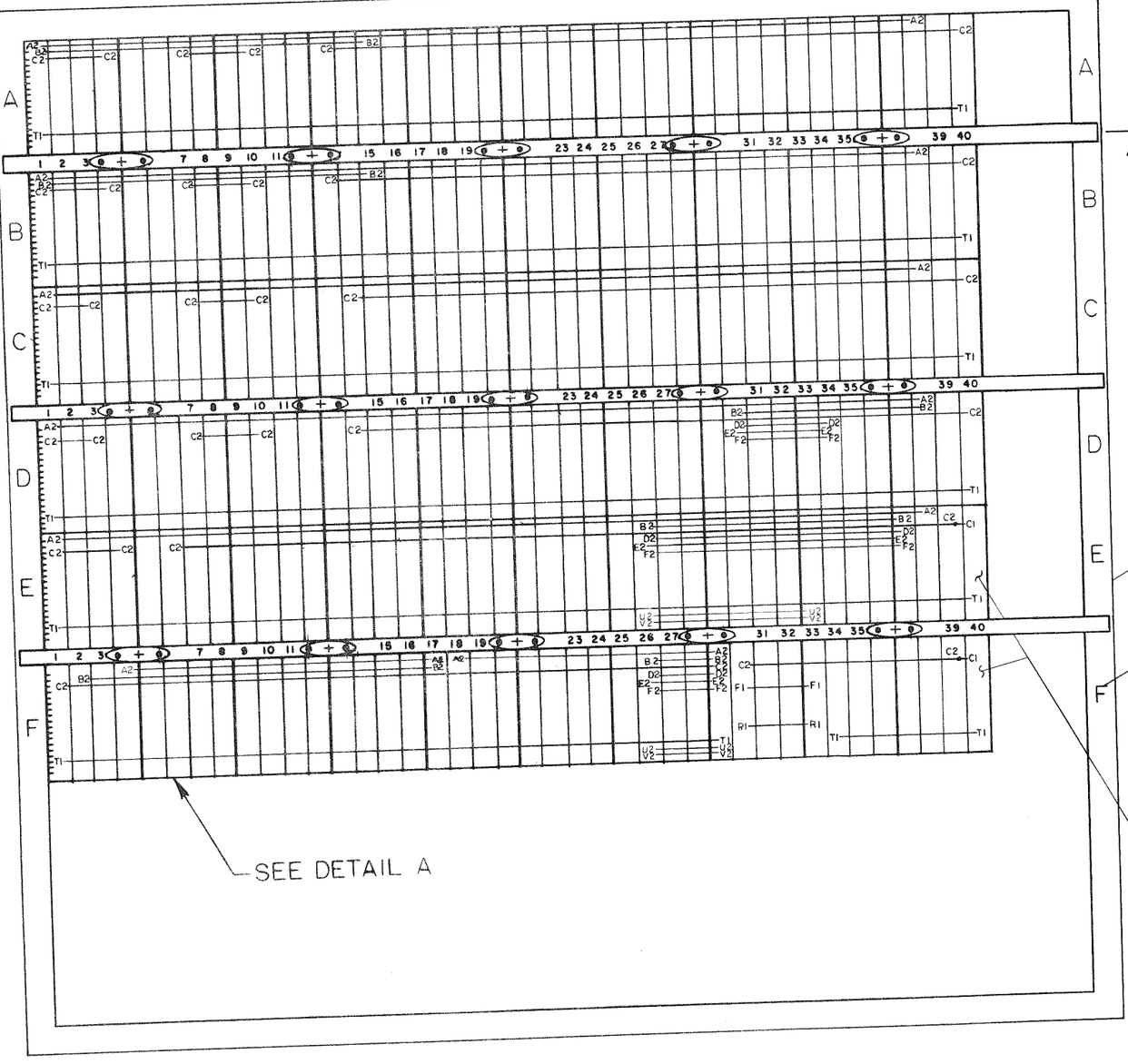
NOTES:
1. CONNECTIONS ON ITEMS #11 & #12 TO BE SOLDERED AND LOCATED AT MINIMUM PRACTICAL HEIGHT ABOVE BOARD.
2. ALL CONN BLOCKS TO BE GROUNDED TO GND LUGS AS SHOWN.
3. USE YELLOW WIRE (ITEM #3) FOR MACHINE WRAPPED & BLUE WIRE (ITEM #4) FOR HAND WRAPPED WIRE.
4. SIDE #1 PINS OF E4Ø & F4Ø ARE GND.

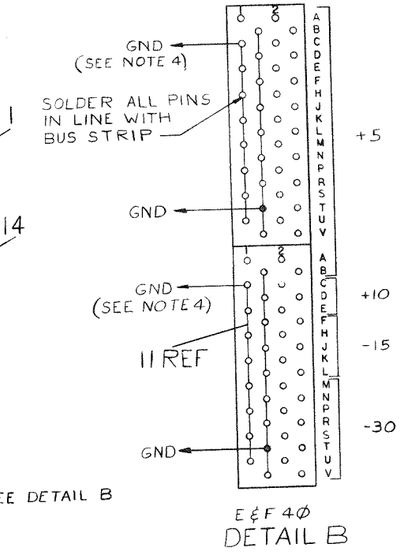


SECTION A-A
SCALE 1/1



DETAIL A
15 PLACES
SEE NOTE #2
SEE NOTE #3





E & F 4Ø
DETAIL B

REVISIONS			
CHK	CHANGE NO.		REV.
	12-00004	Betty Ucbito 2-1469	A
		S. ZNAMIEROWSKI Alexamenrosk 2/17/69	
	12-00006	Paul 2/21/69	B
	12-00009	C. CLAYTON Kj Clayton Nov Drwg 3-7-69	C
	12-00010	ZNAMIEROWSKI Alexamenrosk 3/14/69 Nov Drwg 3-11-69	D
	EM12-00001	GALE C Beaulieu 3/14/69 1 Minor	E
	EM12-00006	GALE Paul 4/24/68 1 Minor	F
	EM12-00008	GALE Paul 8/15/68 Nov Drwg 7-30-68	H
	EM12-00018	L GALE Paul 8-15-69 1 Minor	J
		GALE C Beaulieu 11-20-69 Nov Drwg 12-4-69	

FIRST USED ON OPTION MODEL: PDP12	QTY.	DESCRIPTION	PART NO.	ITEM NO.
UNLESS OTHERWISE SPECIFIED		PARTS LIST		
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30' FINAL SURFACE QUALITY ✓ REMOVE BURRS AND BREAK SHARP CORNERS				
MATERIAL				
FINISH				

DRN	B Simonds	DATE 9-18-68
CHK'D	K Thurs	DATE 1-3-69
ENG	Alexamenrosk	DATE 12/1/68
PROJ. ENG.	Gale	DATE 1-6-69
PROD	D Call	DATE 12/1/69

NEXT HIGHER ASSY: A-ML-EMI2-0
SCALE NONE
SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: LOGIC FRAME ASSY (EMI2)

SIZE	CODE	NUMBER	REV.
D	AD	7005979-0-0	J

DIST.

SIZE D CODE AD NUMBER 7005979-0-0 REV. J

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY G. GIANOULIS	CHECKED K.RUSS	SECTION 1
DATE 9/17/68	DATE 12/30/68	
ENG [illegible]	PROD Wall	ISSUED SECT. 1
DATE 1/7/69	DATE 1/7/69	

ITEM NO.	DWG NO./PART NO.	DESCRIPTION	QUANTITY/VARIATION
1	D-1A-7407207-0-0	DOOR FRAME REWORK	1
2	D-IA-7406100-0-0	MTG BAR	3
3	9105740-5	#30 AWG SOLID TEF INS WIRE YELLOW	A/R
4	9105740-7	#30 AWG SOLID TEF INS WIRE BLUE	A/R
5	9006043-1	SCR PH HD PAN #8-32 x 1 SST	6
6	9006634	WASHER INT TOOTH #8	6
7	9006120	SCR PHL HD FIL POSI DRIVE #8-32 x 5/8 CPS	60
8	E-SC-1205348-0-0	288 PIN CONN BLOCK	30
9	9006121	SCR PHL HD FIL POSI DRIVE #8-32 x 3/8 CPS	15
10	9007597	TERMINAL #2116-08-00 SHAKEPROOF	15
11	1205541	STRIP, BUS	A/R
12	9107560-1	#22 AWG WIRE BUS	A/R
13	9107265	TUBING TEFLON #22 WHT	A/R
14	A-DC-7406370-0-0	LOGIC FRAME DECALS	A/R
REF	K-WL-EM12-0-4	WIRE LIST	

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO.
LOGIC FRAME ASSY (EM12)	D-AD-7005979-0-0	A	PL	7005979-0-0	J	EM12-00018
	SHEET 1 OF 1	DIST.	G			

DEC FORM NO.
DRA 110

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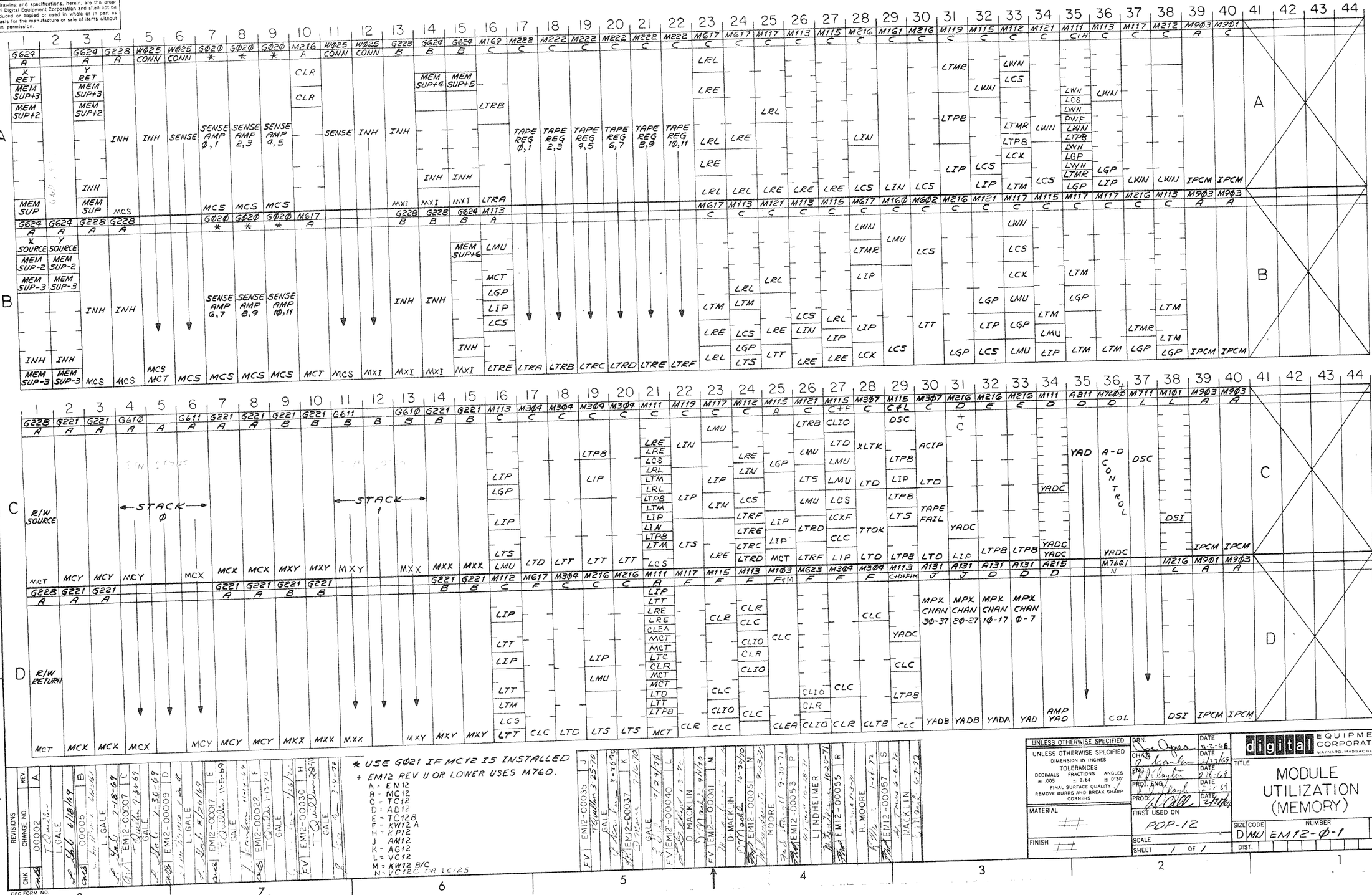

* USE GØ21 IF MC12 IS INSTALLED

\+ EM12 REV U OR LOWER USES M760.

A = EM12
B = MC12
C = TC12
D = AD12
E = TC128
F = KW12 A
H = KP12
J = AM12
K = AG12
L = VC12
M = KW12 B/C
N = VC12C FOR LCI25

REVISIONS				
REV.	CHANGE NO.			
A	00002	L. GALE	T. Baxter	6/18/68
B	00005	L. GALE	T. Baxter	7-18-69
C	EM12-00007	L. GALE	T. Quillen	7-30-69
D	EM12-00009	L. GALE	T. Quillen	8-20-69
E	EM12-00017	L. GALE	T. Quillen	11-5-69
F	EM12-00022	L. GALE	T. Quillen	1-13-70
H	EM12-00030	GALE	T. Quillen	2-27-70
J	EM12-00035	GALE	T. Quillen	3-25-70
K	EM12-00037	GALE	T. Quillen	7-16-70
L	EM12-00040	GALE	T. Quillen	7/27/70
M	EM12-00041	D. MACKLIN		9/11/70
N	EM12-00051	D. MACKLIN		10-30-70
P	EM12-00053	MOORE		9-30-71
R	EM12-00055	H. MOORE		1-26-72
S	EM12-00057	MACKLIN		6-7-72

DEC FORM NO. DRD 105

UNLESS OTHERWISE SPECIFIED
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30' FINAL SURFACE QUALITY / REMOVE BURRS AND BREAK SHARP CORNERS
MATERIAL #
FINISH #

DRN.	Joe Ayoso	DATE 11-2-68
CHK'D	T. Scanlon	DATE 11/27/68
ENG.	T. Scanlon	DATE 2-14-69
PROJ. ENG.	M. Clark	DATE 2-17-69
PROD.	W. Cadle	DATE 2-17-69

FIRST USED ON: PDP-12

SCALE

SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: MODULE UTILIZATION (MEMORY)

SIZE	CODE	NUMBER	REV.
D	MU	EM12-Ø-1	S

DIST.

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	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44
	G805 A	G826 A	M217 F	M217 F	W023 C	W032 C	M217 F	M216 A	M216 *F	M310 A	M310 A	M310 A	M310 A	M360 A	M360 B	M117 C	M117 C	M216 C	M121 C	M216 C	M901 C	M121 B	M113 B	M216 B	M216 C	A214 K	A214 K	A214 K	A214 K	A214 D	A214 D	A214 D	A214 D	A205 D	W023 D	A615 L	A615 L	M216 L	M801 A	G750 A				
				CLKA													LTC		LTT			+ C	+ C		LCKF											HQ PWR SUPPLY									
	MCT	MCT												STROBE Ø	STROBE 1		LTC		LTS							OPT PREAMPS CHAN 20-21	PREAMPS CHAN 22-23	PREAMPS CHAN 24-25	PREAMPS CHAN 26-27	PREAMPS CHAN 10-11	PREAMPS CHAN 12-13	PREAMPS CHAN 14-15	PREAMPS CHAN 16-17	5¢ HOLD		Y AXIS	K AXIS			E				
								MCT									LRE		LTS				LCKF		LCKF																			
				CLKB		TAPE HEAD CABLE		MCT									LMU			LCK		LIP	LCKF		LCK																			
			CLKA		LTC		CLKB	LCX	CLR	MCT	MCT	MCT	MCT	MCT	MCT	LTC	LMU	LMU	LMU	LTS	LTS	DSC	LTRF	LCKF	LCK	YADB	YADB	YADB	YADB	YADA	YADA	YADA	YADA		YAD			DSI	IPCM				
			M703 H	G882 C	G882 C		G882 C	G882 C	G882 C	G853 C	W520 C	R107 C	W512 C		W512 C	W512 C	W603 C	R303 A	M905 F OR M **	M216 F	M719 *F	M719 F	M719 F	M603 F	M603 F	M CABLE ***	A214 K	A214 K	A214 K	A214 K	G783 J	G783 J	G783 D	G783 D					W028 L	W028 L	A			
F			PWR FAIL PWF	MARK LTR	TIME LTR	LTR	D1 LTR	D2 LTR	D3 LTR	RES. BD LTC	UNIT OK LTC	LTR	(MARK TIME) LTR (WRITE) LTR	LTC	LTR	LTC	AUTO RESTART CST	CLTB	CLC CLTB	CLR CLC	CLIO CLC	CLR CLIO	CLEA	CLEB	CLEC	CLEA CLEB CLEC	OPT PREAMPS CHAN 30-31 YADB	CHAN 32-33 YADB	CHAN 34-35 YADB	CHAN 36 37 YADB	ANALOG INPUTS CHAN 30-37 YADB	CHAN 20-27 YADA	CHAN 10-17 YADA	CHAN Ø-7 YAD	YAD		DSY	DSX	SCOPE CABLE VR12 DSX	SCOPE CABLE 5Ø3 DSX	POWER	F		

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44
B																																												

** USE M401 WITH KW12-B
USE M405 WITH KW12-A
OR KW12-C
+ EM12 REV U OR LOWER USES A404

A=EM12
B=MC12
C=TC12
D=AD12
E=TC128
F=KW12-A
H=KP12
J=AM12
K=AG12
L=VC12
M=KW12-B, KW12-C

* USE W023 WITH PINS C2-P2 JUMPERED IN SLOT E9 AND M508 WITH PINS C2-E1 JUMPERED IN SLOT F20 WHEN KW12A IS NOT INSTALLED
*** USE M870 WITH KW12B OR KW12C

REVISIONS			
CHK	CHANGE NO.	REV.	
	00002	A	T. Quillin
	EM12-00009	B	L. GALE
	EM12-00017	C	T. Quillin 8/26/69 GALE
FV	EM12-00035	D	T. Quillin 3/26/70 GALE
	EM12-00037	E	3-26-70 Zuse
FV	EM12-00039	F	GALE 7/2/70
	EM12-00040	H	L. GALE 8-25-70
	EM12-00041	J	D. MACKLIN 9/4/70
FV	EM12-00044	K	D. MACKLIN 10/30/70 2-2-71
	EM12-00053	L	SCANLON 4-7-71
	EM12-00055	M	LINDHEIMER 10-20-71 R. MOORE 1-3-72

DEC FORM NO. DF-J 105

UNLESS OTHERWISE SPECIFIED	
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30' FINAL SURFACE QUALITY REMOVE BURRS AND BREAK SHARP CORNERS	
MATERIAL	
FINISH	

DRN		DATE 11-24-68
CHK	T. Quillin	DATE 2/27/69
ENG	L. Gale	DATE 2-28-69
PROJ. ENG.		DATE
PROD.	W. Clark	DATE 2/28/69
FIRST USED ON	PDP-12	
SCALE		
SHEET	1 OF 1	

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: MODULE UTILIZATION (MEMORY)

SIZE	CODE	NUMBER	REV.
D	MU	EM12-Ø-2	M

DIST.

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY R. COOK
DATE 3/27/69
CHECKED J. FLEMING
DATE 4/1/69
SECTION
ENG L. Gale
DATE 5/6/69
PROD W Cull
DATE 5/6/69
ISSUED SECT.

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	EM12	MC12	TC12	AD12	TC12-F	KW12-A	KP12	AM12	AG12	VC12	KW12-B	KW12-C
	G624	RISISTOR BOARD	4	3										
	G228	INHIBIT DRIVER	5	3										
	G020	SENSE AMP	6											
	G021	SENSE AMP		6										
	M169	GATING MODULE			1									
	M222	TAPE REGISTER			6									
	M617	FOUR-INPUT POWER NAND GATE			4			1						
	M113	NAND GATE			7	1		2					1	1
	M115	NAND GATE			7			1				1		
	M216	SIx FLIP FLOPS	1		6	1	2					1		
	M161	BINARY TO OCTAL/DECIMAL DECODER			1									
	M119	NAND GATE			2									
	M112	NOR GATE			3									
	M121	AND/NOR GATE			4									
	M111	INVERTER	1		2	1			1					
	M212	SHIFT REGISTER			1									
	M160	AND/NOR GATE			1									
	M602	PULSE AMPLIFIER			1									
	M117	NAND GATE			6			1				1		
	G221	MEMORY SELECTOR	8	8										

TITLE: MODULE COUNT
ASSY NO. D-MU-EM12-0-1
SHEET 1 OF 2
SIZE A | CODE PL | NUMBER EM12-0-1 | REV S | ECO NO. EM12-00057
DIST.

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY R. COOK
DATE 3/27/69
CHECKED J. FLEMING
DATE 4/1/69
SECTION
ENG L. Gale
DATE 5/6/69
PROD W Cull
DATE 5/6/69
ISSUED SECT.

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	EM12	MC12	TC12	AD12	TC12-F	KW12-A	KP12	AM12	AG12	VC12-C* VC12	KW12-B	KW12-C
	M304	PULSE AMPLIFIER			5			2						
	M307	ONE SHOT			2									
	A811	A-D CONVERTER				1								
*	M7600	A-D CONTROL				1								
	M711	DISPLAY CONTROL										1		
	M101	BUS DATA INTERFACE										1		
	M103	DEVICE SELECTOR						1					1	1
	M623	BUS DRIVER						1						
	A131	MULTIPLEXER				2				2				
	A215	ANALOG BUFFER				1								
	M7601	611/COLOR CONTROL										1*		
*	AD12'S PRE-WIRED TO	EM12 REV. U OR LOWER												
	USE M760 INSTEAD OF	M7600.												

TITLE: MODULE COUNT
ASSY NO. D-MU-EM12-0-1
SHEET 2 OF 2
SIZE A | CODE PL | NUMBER EM12-0-1 | REV S | ECO NO.
DIST.

DEC FORM NO.
DRA 110

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY R. COOK	CHECKED J. FLEMING	SECTION
DATE 3/27/69	DATE 4/1/69	
ENG L. Gale	PROD D Cole	ISSUED SECT.
DATE 5/6/69	DATE 5/6/69	

ITEM NO.	DWG NO./PART NO.	DESCRIPTION	EM12	MC12	TC12	AD12	TC12-F	KW12-A	KP12	AM12	AG12	VC12	KW12-C	KW12-B
	G805	NEGATIVE REGULATOR	1											
	G826	REGULATOR CONTROL	1											
	M217	CLOCK COUNTER BUFFER						3						
	M216	SIx FLIP FLOP	1	1	3			2				1		
	M310	DELAY LINE	4											
	M360	VARIABLE DELAY	1	1										
	M117	NAND GATE			2									
	M121	AND/NOR GATE		1	1									
	M401	VARIABLE CLOCK			1									
	M113	NAND GATE		1										
	A214	AMPLIFIER				4					8			
*	A405	SAMPLE & HOLD				1								
	A615	D-A										2		
	G780	CONTROL FOR 739 POWER SUPPLY	1											
	M703	POWER FAIL							1					
	G882	MANCHESTER READER WRITER			5									
	G853	MOTION & SELECTION CIRCUIT			1									
	W520	COMPARATOR			1									
	R107	INVERTER			1									
	W512	POSITIVE LEVEL CONVERTER			3									
	W603	PULSE LEVEL AMPLIFIER			1									
	R303	INTERGRATING ONE SHOT	1											

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO.
MODULE COUNT	D-MU-EM12-0-2	A	PL	EM12-0-2	M	EM12-00055
	SHEET 1 OF 2	DIST.				

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY R. COOK	CHECKED J. FLEMING	SECTION
DATE 3/27/69	DATE 4/1/69	
ENG L. Gale	PROD D Cole	ISSUED SECT.
DATE 5/6/69	DATE 5/6/69	

ITEM NO.	DWG NO./PART NO.	DESCRIPTION	EM12	MC12	TC12	AD12	TC12-F	KW12-A	KP12	AM12	AG12	VC12	KW12-C	KW12-B
	M405	CRYSTAL CLOCK						1					1	
	M719	SUPER CLOCK SYNCRONIZER						3						
	M503	SCHMIDT TRIG & PA						2						
	~~G783~~	~~CABLE CONNECTOR~~				~~2~~				~~2~~				
	M870	SIMPLE CLOCK											1	1
	M401	VARIABLE CLOCK												1
*	AD12'S PRE-WIRED TO EM12 REV. U OR LOWER USE A404 INSTEAD OF A405.													

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO.
MODULE COUNT	D-MU-EM12-0-2	A	PL	EM12-0-2	M	
	SHEET 2 OF 2	DIST.				

DEC FORM NO.
DRA 110

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SIGNAL NAME	FROM PIN	TO PIN	COLOR	REMARKS
Ground	F4ØV1	F28T1	Black	
	F4ØU1	EF28C2		
	F40T1	FØ1C2		
	F4ØS1	F34C2		
	F4ØR1	FØ1T1		
	F4ØP1	F39C2		
	F4ØN1	EØ1C2		
	F4ØM1	EØ6C2		Wire is #24
	F4ØL1	EØ1T1		A.W.G.
	F4ØK1	E39C2		
	F4ØJ1	DØ1T1		
	F4ØH1	DO1C2		
	F4ØF1	DIØC2		
	F4ØE1	DI4C2		
	F4ØD1	D4ØTI		
	F4ØC1	D4ØC2		
	F4ØB1	CØ1T1		
	E4ØV1	CØ1C2		
	E4ØU1	C1ØC2		
	E4ØT1	C14C2		
	E4ØS1	C4ØT1		
	E4ØR1	C4ØC2		
	E4ØP1	BØITI		
	E4ØN1	BØ1C2		
	E4ØM1	B1ØC2		
	E4ØL1	B13C2		

REVISIONS			
REV.	DATE	CHG. NO.	APP'D.
A	4/69	00001	
B	11-20-69	EM12-00018	

DRN. J Scanlon DATE 3/10/69
CHK'D. J Scanlon DATE 3/10/69
ENG. L. Gale DATE 3/11/69
PROJ. ENG. L. Gale DATE 3/11/69
PROD. D Call DATE 3/11/69
FIRST USED ON
SCALE
SHEET 1 OF 3

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
GENERAL WIRING SHEET
FOR DC Power Memory Logic

SIZE	CODE	NUMBER	REV.
A	WL	EM12-0-4	B

DIST.

DEC FORM NO.
DRA 104

SIGNAL NAME	FROM PIN	TO PIN	COLOR	REMARKS
Ground	E4ØK1	B4ØT1	Black	
	E4ØJ1	B4ØC2		
	E4ØH1	A01T1		
	E4ØE1	AØ1C2		
	E4ØD1	A1ØC2		
	E4ØC1	A13C2		Wire is #24
	E4ØB1	A4ØT1		A. W. G.
	E4ØD1	A4ØC2		
	E4ØF1	B19C2		
	E4ØH1	A19C2		
	F4ØV1	EØ1P2		
	F4ØU1	FØ1L2		
+5V	F4ØA2	FØ2A2	RED	
	E4ØV2	E38A2		
	E40U2	EØ1A2		
	E4ØT2	D38A2		
	E40S2	DØ1A2		
	E4ØR2	C38A2		
	E4ØP2	CØ1A2		
	E4ØN2	B38A2		
	E4ØM2	BØ1A2		
	E4ØL2	A38A2		
	E4ØK2	A01A2		
	E4ØJ2	B19A2		
	E4ØH2	A19A2		
	F4ØB2	F29A2		

REVISIONS			
REV.	DATE	CHG. NO.	APP'D.

DRN. J Scanlon DATE 3/10/69
CHK'D. J Scanlon DATE 3/10/69
ENG. L. Gale DATE 3/11/69
PROJ. ENG. L. Gale DATE 3/11/69
PROD. D Call DATE 3/11/69
FIRST USED ON
SCALE
SHEET 2 OF 3

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
GENERAL WIRING SHEET
FOR DC POWER Memory Logic

SIZE	CODE	NUMBER	REV.
A	WL	EM12-0-4	B

DIST.

DEC FORM NO.
DRA 104

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SIGNAL NAME	FROM PIN	TO PIN	COLOR	REMARKS
+10V	F4ØD2	F17A2	Green	
-15V	F4ØL2	F29B2	Blue	
	F4ØK2	FØ2B2		
	F4ØJ2	E37B2		
	F4ØH2	D33B2		Wire is #24
	F40F2	A01B2		A. W. G.
	F4ØK2	AØ1B2		
-30V	F4ØN2	F4ØP2	Yellow	
	F4ØM2	F4ØN2		
	F4ØP2	EØ1E2		
	F4ØR2	F4ØS2		
	F4ØS2	E01F2		
	E4042	E4ØV2		
	F4ØT2	F4Ø42		
	F4ØV2	EØ1H2		
+5V	E4ØF2	C19A2		
	E4ØE2	D19A2		
MCT X R/W SOURCE	CØIKI	CØ7T2	GREEN	
MCT Y R/W SOURCE	CØISI	CØ2T2	GREEN	

REVISIONS			
REV.	DATE	CHG. NO.	APP'D.

DRN. G Scanlon DATE 3/10/69
CHK'D. G Scanlon DATE 3/10/69
ENG. L Gale DATE 3/10/69
PROD. ENG. L Gale DATE 3/10/69
PROD. D Call DATE 3/10/69
FIRST USED ON
SCALE
SHEET 3 OF 3

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
GENERAL WIRING SHEET
FOR DC ~~POWER~~ MEMORY Logic

SIZE	CODE	NUMBER	REV.
A	WL	EM12-0-4	B

DIST.

DEC FORM NO.
DRA 104

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M901 A40

A1	LIP PROGRESS (1)H
B1	LTR WRITE ON L
C1	LIP TAPE PAUSE H
D1	LIP TAPE BRK REQ (Ø)H
E1	LIP TAPE INTERRUPT L
F1	LIP MSC TAC TO AC H
H1	LTP8 BLOCK (1)H
J1	LTP8 WORD H
K1	LIP TAPE BRK REQ (1)H
L1	LCS TURN ARND (1)L
M1	LIP PROGRESS (Ø)H
N1	LIP TAPE OUT H
P1	LTR MARK ON L
R1	LWN IM H
S1	LIP CHK SUM TO AC L
T1	GND
U1	LIP CHK SUM LD AC L
V1	GND

M903 B40

B1	MCS MEM Ø0 H
J1	MCS MEM Ø3 H
K1	MCS MEM Ø4 H
L1	MCS MEM Ø5 H
M1	MCS MEM Ø6 H
P1	MCS MEM Ø7 H
S1	MCS MEM Ø8 H

M903 C40

B1	PRB MB Ø3 (Ø)H
D1	PRB MB Ø3 (1)H
E1	PRC MB Ø4 (Ø)H
H1	PRC MB Ø4 (1)H
J1	PRC MB Ø5 (Ø)H
L1	PPC MB Ø5 (1)H
M1	PRD MB Ø6 (Ø)H
P1	PRD MB Ø6 (1)H
S1	PRD MB Ø7 (Ø)H

M903 D40

B1	PRA MA Ø0 (Ø)H
D1	PRA MA Ø0 (1)H
E1	PRA MA Ø1 (1)H
H1	PRB MA Ø2 (1)H
J1	PRB MA Ø3 (Ø)H
L1	PRB MA Ø3 (1)H
M1	PRC MA Ø4 (1)H
P1	PRC MA Ø5 (1)H
S1	PRD MA Ø6 (Ø)H

M903 A39

B1	INT IO BUS Ø0 L
D1	INT IO BUS Ø1 L
E1	INT IO BUS Ø2 L
H1	INT IO BUS Ø3 L
J1	INT IO BUS Ø4 L
L1	INT IO BUS Ø5 L
M1	INT IO BUS Ø6 L
P1	INT IO BUS Ø7 L
S1	INT IO BUS Ø8 L

M901 E39

A1	PWF PWR LOW (Ø)H
B1	CST SFT AUTO L
C1	PRD AC Ø7 (Ø)H
D1	PRE AC Ø8 (Ø)H
E1	PRE AC Ø9 (Ø)H
F1	CPT TS RECYCLE (Ø)H
H1	CST AUTO DEL L
J1	INR IR Ø7 (1)H
K1	INR IR Ø8 (1)H
L1	INR IR Ø9 (1)H
M1	INR IR 10 (1)H
N1	INR IR 11 (1)H
P1	INS N EQ Ø1 H
R1	INS N EQ Ø3 H
S1	CST D0 (1)H
T1	GND
U1	DSC SIZE (Ø)H
V1	PWF RESTART L

M901 A40

B2	SLA EX TS4 H
D2	LTRA TAPE BUS Ø0 H
E2	LTRA TAPE BUS Ø1 H
F2	LTRB TAPE BUS Ø2 H
H2	LTRB TAPE BUS Ø3 H
J2	LTRC TAPE BUS Ø4 H
K2	LTRC TAPE BUS Ø5 H
L2	LTRD TAPE BUS Ø6 H
M2	LTRD TAPE BUS Ø7 H
N2	LTRE TAPE BUS Ø8 H
P2	LTRE TAPE BUS Ø9 H
R2	LTRF TAPE BUS 10 H
S2	LTRF TAPE BUS 11 H
T2	LIP TAPE BUS TO AC L
U2	GND
V2	LIP TAPE SKIP L

M903 B40

D2	MCS MEM Ø9 H
E2	MCS MEM 10 H
H2	MCS MEM 11 H
K2	PRA MB Ø0 (Ø)H
M2	PRA MB Ø0 (1)H
P2	PRA MB Ø1 (Ø)H
S2	PRA MB Ø1 (1)H
T2	PRB MB Ø2 (Ø)H
V2	PRB MB Ø2 (1)H

M903 C40

D2	PRD MB Ø7 (1)H
E2	PRE MB Ø8 (Ø)H
H2	PRE MB Ø8 (1)H
K2	PRE MB Ø9 (Ø)H
M2	PRE MB Ø9 (1)H
P2	PRF MB 10 (Ø)H
S2	PRF MB 10 (1)H
T2	PRF MB 11 (Ø)H
V2	PRF MB 11 (1)H

M903 D40

D2	PRD MA Ø6 (1)H
E2	PRD MA Ø7 (1)H
H2	PRE MA Ø8 (1)H
K2	PRE MA Ø9 (Ø)H
M2	PRE MA Ø9 (1)H
P2	PRF MA 10 (1)H
S2	PRF MA 11 (1)H
T2	MCT STROBE L
V2	MCT MEM DONE L

M903 A39

D2	INT IO BUS Ø9 L
E2	INT IO BUS 10 L
H2	INT IO BUS 11 L
K2	INT SKIP BUS L
M2	INT AC CLEAR BUS L
P2	DSC Z DRIVER
S2	MXF EA 2 H
T2	IOC IO STROBE L
V2	INS SAM H

M901 E39

A2	CLIO INT RQST L
B2	DSC 503 INTEN L
D2	LCS IDLE (1)L
E2	LCS SEARCH (1)L
F2	LCS BLOCK (1)L
H2	LCX NO PAUSE (1)L
J2	LCX EX ADD FORMAT (1)L
K2	LCS CHK WRD (1)L
L2	MCT PWR STOP L
M2	LIN TINR 11 (1)L
N2	LIN TINR 10 (1)L
P2	LIN TINR Ø9 (1)L
R2	LCX MARK (1)L
S2	INS MTP H
T2	INS B MSC H
U2	CSI KEY MARK L
V2	LIP TAPE WORD (1)H

M903 B39

B1	CPTP START MEMORY H
D1	IOC IO PRESET L
E1	CPTP TP2 H
H1	CPTP TP5D H
J1	CPTP TP4 H
L1	CPTP TP5 H
M1	IOC IOP 1 L
P1	IOC IOP 2 L
S1	IOC IOP 4 L

M903 B39

D2	MCT PWR CLR L
E2	CPT TS2 (1)H
H2	CPT TS3 (1)H
K2	CPT TS4 (1)H
M2	CPT TS5 B (1)H
P2	CPS EXECUTE B (1)H
S2	CPS FETCH B (1)H
T2	CST IO PRESET H
V2	PWF PWR SKIP L

M903 C39

B1	PRA AC Ø0 (1)H
D1	PRA AC Ø1 (1)H
E1	PRB AC Ø2 (1)H
H1	PRB AC Ø3 (1)H
J1	PRC AC Ø4 (Ø)H
L1	PRC AC Ø4 (1)H
M1	PRC AC Ø5 (1)H
P1	PRD AC Ø6 (1)H
S1	PRD AC Ø7 (1)H

M903 C39

D2	PRE AC Ø8 (1)H
E2	PRE AC Ø9 (1)H
H2	PRF AC 10 (Ø)H
K2	PRF AC 10 (1)H
M2	PRF AC 11 (Ø)H
P2	PRF AC 11 (1)H
S2	RCL LOAD MSC 4 H
T2	PRB AC Ø3 (Ø)H
V2	LIP TAPE BRK REQ (Ø)H

M901 D39

A1	YAD AD Ø2 (1)H
B1	YADC AD Ø3 (Ø)H
C1	YADC AD Ø4 (Ø)H
D1	YADC AD Ø5 (Ø)H
E1	YADC AD Ø6 (Ø)H
F1	YADC AD Ø7 (Ø)H
H1	YADC AD Ø8 (Ø)H
J1	YADC AD Ø9 (Ø)H
K1	YADC AD 10 (Ø)H
L1	YADC AD 11 (Ø)H
M1	CPT (DIS+DSC) H
N1	SLA (DSC+EXECUTE 2) L
P1	INS DIS L
R1	INS DSC L
S1	CPR RUN (1)H
T1	GND
U1	DSC BUSY H
V1	YADC A-D RECYCLE L

M901 D39

A2	MXF EA (Ø)L
B2	MXF EA (1)L
D2	MXF DF Ø0 (1)H
E2	MXR DF Ø1 (1)H
F2	MXR DF Ø2 (1)H
H2	MPG DF Ø3 (1)H
J2	MPG DF Ø4 (1)H
K2	MXR IF Ø0 (1)H
L2	MXR IF Ø1 (1)H
M2	MXR IF Ø2 (1)H
N2	MPG TF Ø3 (1)H
P2	MPG TF Ø4 (1)H
R2	INR IR Ø8 (1)H
S2	YADC FAST SAM (1)H
T2	LCX TF Ø0 (1)H
U2	LCX TF Ø1 (1)H
V2	LCX TF Ø2 (1)H

REVISIONS			REVISIONS		
CHK	CHANGE NO.	REV.	CHK	CHANGE NO.	REV.
	EM12-00002	A	NR	EM12-00015	E
	J FASSHAUSER 4-15-69			ADS	
	L GALE 4-29-69			J SCANLAN	
	EM12-00002	B	NR	EM12-00017	F
	A WASHINGTON 6-15-69			A WASHINGTON 11-13-69	
	L GALE			J SCANLAN 11-14-69	
	EM12-00004	C		EM12-00044	H
	B KORTLANG 9-12-69			ADS	
	L GALE 9-12-69			J SCANLAN	
NR	EM12-00007	D		EM12-00047	J
	B KORTLANG 9-26-69				
	L GALE 9-26-69				

DRN. D.L.SHEPARD	DATE 3-3-69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
CHK'D. J.R.BISONETE	DATE 3-3-69		
ENG. L.GALE	DATE 3-3-69	TITLE INTER PROC CABLES	
PROJ. ENG. L.GALE	DATE 3-3-69		
PROD. D.CALL	DATE 3-3-69		
FIRST USED ON EM12		SIZE D	CODE BS
SCALE		NUMBER EM12-0-IPCM	REV. J
SHEET 1 OF 1		DIST.	

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W Ø25 A Ø5 B Ø5

AC2 AD2 AE2 AF2 AH2 AJ2 AK2 AL2 AM2 AN2 AP2 AR2 BC2 BD2 BE2 BF2 BH2 BJ2 BK2 BL2 BM2 BN2 BP2 BR2

INHIB DRIVER Ø 1 2 3 4 5 6 7 8 9 10 11

MCT MEMORY SUPPLY +1
MCT MEMORY SUPPLY -1
MCT MEM SUPPLY +2
MCT MEM SUPPLY -2
MCT MEM SUPPLY +3
MCT MEM SUPPLY -3

G624 A03 G624 B02 G624 B01

MCT B INHIBIT H
MCT B FIELD (Ø) H

PRA MBØØ (Ø) H PRA MBØ1 (Ø) H PRB MBØ2 (Ø) H PRB MBØ3 (Ø) H PRC MBØ4 (Ø) H PRC MBØ5 (Ø) H PRD MBØ6 (Ø) H PRD MBØ7 (Ø) H PRE MBØ8 (Ø) H PRE MBØ9 (Ø) PRF MB1Ø (Ø) H PRF MB11 (Ø) H

G228 A04 G228 B04 G228 B03

G021 * A07 G021 * A08 G021 * A09 G021 * B07 G021 * B08 G021 * B09

MCS MEM ØØ H MCS MEM Ø1 H MCS MEM Ø2 H MCS MEM Ø3 H MCS MEM Ø4 H MCS MEM Ø5 H MCS MEM Ø6 H MCS MEM Ø7 H MCS MEM Ø8 H MCS MEM Ø9 H MCS MEM 1Ø H MCS MEM 11 H

MCT B MEM ENABLE H

SENSE Ø0 SENSE Ø1 SENSE Ø2 SENSE Ø3 SENSE Ø4 SENSE Ø5 SENSE Ø6 SENSE Ø7 SENSE Ø8 SENSE Ø9 SENSE 1Ø SENSE 11

MCT MEM BEGIN L

MCT STROBE FIELD Ø H
MCT STROBE FIELD 1 H

SLICE

G021 pin 52: N.C.

W Ø25 A Ø6 B Ø6

W Ø25 A11 B11

AC2 AD2 AE2 AF2 AH2 AJ2 AK2 AL2 AM2 AN2 AP2 AR2 BC2 BD2 BE2 BF2 BH2 BJ2 BK2 BL2 BM2 BN2 BP2 BR2

* USE GØ2Ø ONLY IF MC12 IS NOT INSTALLED

REVISIONS	REV
CHANGE NO EM12-00003	A
CHK T.QUILLIN 8-23-68	
L.GALE 8/29/68	

UNLESS OTHERWISE SPECIFIED		
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30' FINAL SURFACE QUALITY REMOVE BURRS AND BREAK SHARP CORNERS	DRN Joe Ippia	DATE 1-17-68
	CHK'D G Scanlon	DATE 2/27/69
	ENG R.J. Clayton	DATE 2-28-69
	PROJ. ENG R.J. Clayton	DATE 2-28-69
	PROD W.Hall	DATE 3/4/69
MATERIAL	FIRST USED ON EM12	
FINISH	SCALE	
	SHEET 1 OF 1	

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE MCS SENSE AMPS & INHIBIT DRIVERS

SIZE D | CODE BS | NUMBER EM12-Ø-MCS | REV A | DIST.

DEC FORM NO DRD 102

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MCT B MEM ENABLE H
+3V B1ØV1 H
MCT B FIELD (Ø)H
MCT B FIELD (1)H
MCT B INHIBIT H
M21G EØ8
MCT MEM ENABLE
MCT FIELD
MCT READ
MCT INHIBIT
MCT WRITE
MCT MEM BEGIN L
CST IO PRESET L
+3V B1ØU1 L
CPTP START MEMORY H
MXF EA2 H
.1Ø µS
.2Ø µS
.3 µS
.15 µS
.4 µS
M31Ø E1Ø
M31Ø E11
M31Ø E12
M31Ø E13
M36Ø E14
M36Ø E15
MCT MEM DONE L
MCT MEM FINISH H
-MXF EA Ø H
-MXF EA 1 H
MCT FIELD (Ø) H
MCT FIELD (1) H
MCT STROBE FIELD Ø H
MCT STROBE FIELD 1 H
MCT STROBE L
PWF STOP OK H
-MCT POWER OK H
MCT PWR STOP L
G624 AØ3
G624 AØ1
G624 BØ2
G625 BØ1
MCT MEMORY SUPPLY +Ø
MCT MEMORY SUPPLY -Ø
MCT NEG CLAMP H
G826 E2 F2
-MCT POWER OK H
-MCT POWER CLEAR H
WØ25 BØ5
REGULATOR AND POWER DETECTOR
THERMISTOR
PWF STOP OK H
-MCT SHUTDOWN H
G805 EØ1 FØ1
NEGATIVE REGULATOR
MCT X R/W SOURCE
MCT Y R/W SOURCE
MCT X R/W RETURN
MCT Y R/W RETURN
G228 DØ1
G228 CØ1
+3V B1ØU1H
MCT READ(1) H
MCT WRITE(1) H
* USE ONLY IF MC12 IS INSTALLED

REVISIONS	REV.	CHK	DRN	DATE
CHANGE NO. 00002	A		T. Quillin	6/18/68
EM12-00004	B		L. Gale	8-18-69
EM12-00017	C		T. Quillin	11-5-69
			L. Gale	11-4-69

UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINAL SURFACE QUALITY
REMOVE BURRS AND BREAK SHARP CORNERS
MATERIAL
FINISH

		DATE
DRN.	Jos Dyer	2-13-69
CHK'D	T Scanlon	2/21/69
ENG.	L Gale	2-26-69
PROJ. ENG.	T Quillin	2-26-69
PROD.	N Fall	3/19/69

FIRST USED ON: EM12
SCALE
SHEET / OF /

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: MCT MEMORY CONTROL

SIZE D | CODE BS | NUMBER EM12-Ø-MCT | REV C | DIST.

DEC FORM NO. DRD 102A

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G221 CØ8

G611 CØ6 DØ6

CV2 CU2 CT2 CS2 CR2 CP2 CN2 CM2 CL2 CK2 CJ2 CH2 CF2 CE2 CD2 CC2

R2I S2I N2I P2I L2I M2I J2I K2I

7Ø 71 72 73 74 75 76 77
6Ø 67
5Ø 57
4Ø 47
3Ø 37
2Ø 27
1Ø 17
ØØ Ø1 Ø2 Ø3 Ø4 Ø5 Ø6 Ø7

DC2 DD2 DE2 DF2 DH2 DJ2 DK2 DL2 DM2 DN2 DP2 DR2 DS2 DT2 DU2 DV2

G610 CØ4 DØ4

PRA MAØ1 (1)H — H2
PRB MAØ2 (1)H — F2
MCT NEG CLAMP H — V2
PRA MA ØØ(1)H — E2
D2
T2

G221 CØ7

PRA MAØ1 (1)H — H2
PRB MAØ2 (1)H — F2
MCT NEG CLAMP H — V2
PRA MA ØØ(Ø)H — E2
MCT B FIELD (Ø)H — D2
T2

MCT X R/W SOURCE
MCT X R/W RETURN

K2 J2 M2 L2 P2 N2 S2 R2

T2

MCT B FIELD (Ø)H — D2
PRB MAØ3 (Ø)H — E2
MCT NEG CLAMP H — V2
PRC MAØ5 (1)H — F2
PRC PRB MA Ø4(1)H — H2

G221 DØ2

D2
PRB MA Ø3(1)H — E2
PRC MAØ5(1)H — F2
PRC MA Ø4(1) H — H2

G221 DØ3

V2 MCT NEG CLAMP H

REVISIONS			
CHK	CHANGE NO.	REV	
PS	EM12-00015	A	Jackie Moreau 10/7/69
FV	EM12-00030	B	L. GALE
	T.Q.W. 2-2-70		
	GALE		J. Gale 1-29-70

UNLESS OTHERWISE SPECIFIED
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30' FINAL SURFACE QUALITY REMOVE BURRS AND BREAK SHARP CORNERS
MATERIAL
FINISH

DRAL		DATE 1-29-69
CHKD	D. Scarlett	DATE 2/2/69
ENG	L. Clayton	DATE 2-28-69
PROJ. ENG	L. Clayton	DATE 2-28-69
PROD	J. Hall	DATE 3/2/69

FIRST USED ON: EM12

SCALE

SHEET 1 OF 1

PARTS LIST

QTY.	DESCRIPTION	PART NO.	ITEM NO.

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: MCX X AXIS SELECTION

SIZE D | CODE BS | NUMBER EM12-Ø-MCX | REV. B

DIST.

DEC FORM NO DRD 102

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G221 CØ3

G610 CØ8 DØ4

CV2 CU2 CT2 CS2 CR2 CP2 CN2 CM2 CL2 CK2 CJ2 CH2 CF2 CE2 CD2 CC2

7Ø 71 72 73 74 75 76 77

6Ø 67

5Ø 57

4Ø 47

3Ø 37

2Ø 27

1Ø 17

ØØ Ø1 Ø2 Ø3 Ø4 Ø5 Ø6 Ø7

DC2 DD2 DE2 DF2 DH2 DJ2 DK2 DL2 DM2 DN2 DP2 DR2 DS2 DT2 DU2 DV2

G611 CØ9 DØ6

PRD MAØ7 (1)H — H2

PRE MAØ8 (1)H — F2

MCT NEG CLAMP H — V2

PRD MA ØG(1)H — E2 D2 T2

G221 CØ2

V2

PRD MAØ7 (1)H — H2

PRE MAØ8 (1)H — F2

PRD MA ØG(Ø)H — E2

MCT B FIELD (Ø)H — D2

T2

MCT Y R/W SOURCE

MCT Y R/W RETURN

MCT B FIELD(Ø)H — D2

PRE MAØ9(Ø)H — E2

MCT NEG CLAMP H — V2

PRF MA11 (1)H — F2

PRF MAIØ (1)H — H2

G221 DØ7

PRE MAØ9(1)H — D2 E2

PRF MA 11(1)H — F2

PRF MA 1Ø(1)H — H2

G221 DØ8

V2 MCT NEG CLAMP H

REVISIONS	CHK	CHANGE NO.	REV.
L. GALE 10/15/69	DB	EM12-00015	A
T. Quillen 3-2-70	FV	EM12-00030	B
GALE 3-4-70			

UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINAL SURFACE QUALITY √
REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL

FINISH

DRN	Joe Hara	DATE 1-23-69
CHK'D	D Scanlon	DATE 2/27/69
ENG	RJ Clayton	DATE 2-28-69
PROJ ENG	RJ Clayton	DATE 2-28-69
PROG	WF Hall	DATE 2/4/69

FIRST USED ON EM12

SCALE

SHEET OF

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE

MCY
Y AXIS SELECTION

SIZE	CODE	NUMBER	REV.
D	BS	EM12-Ø-MCY	B

DIST.

DEC FORM NO. DRD 102

REV B | SIZE D | CODE BS | NUMBER EM12-Ø-MCY

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Orig. Lost
Retyped 10/6/70

MASTER DRAWING LIST

DWG. NO.	REV. LET.	NO. OF SHEETS	TITLE
D-MU-EP12-0-1	REF	2	MODULE UTILIZATION PROC
D-MU-EM12-0-1	REF		MODULE UTILIZATION (MEMORY)
D-MU-EM12-0-2	REF		MODULE UTILIZATION (MEMORY)
A-ML-EP12-0	REF	2	PROCESSOR
A-ML-EM12-0	REF	1	MEMORY
D-BS-MC12-0-MXB	D	1	MEM EXTN BUFFER
D-BS-MC12-0-MXF	L	1	MEM EXTN FIELD
D-BS-MC12-0-MXI	A	1	MXI INHIBIT DRIVERS
D-BS-MC12-0-MXR	F	1	MEM EXTN REGISTERS
D-BS-MC12-0-MXX	B	1	X-AXIS SELECTION
D-BS-MC12-0-MXY	B	1	Y-AXIS SELECTION
A-PL-EP12-0-1	REF	3	MODULE UTILIZATION PROC PL
A-PL-EM12-0-1	REF		MODULE UTILIZATION MEM PL
A-PL-EM12-0-2	REF		MODULE UTILIZATION MEM PL

REVISIONS			
REV.	DATE	CHG. NO.	APP'D.
A	3/18/69	EP12-1	J.S.
B	4/18/69	EP12-2	J.S.
C	5/21/69	EP12-3	L.G.
D	6/5/69	EP12-4	L.G.
E	6/11/69	EM12-3	L.G.
F	6/69	EP12-6	L.G.
H	7/69	EP12-7	L.G.
J	7/69	EP12-9	L.G.
K	9/69	EM12-15	L.G.
L	2/70	EM12-30	L.G.
M	5/70	EP12-21	L.G.
N	7/70	EP12-26	L.G.
P	10/70	EP12-30	L.G.
R	3/71	EP12-36	J.S.
S	1/72	EP12-44	R.M.
T	7/72	EP12-46	R.I.

DEC FORM NO.
DRA 103

DRN. J. Aprea	DATE 3/7/69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. R.Hutnak	DATE 3/7/69	
ENG. L. Gale	DATE 3/10/69	
PROJ. ENG. L. Gale	DATE 3/10/69	
PROD. D. Call	DATE 3/10/69	
FIRST USED ON PDP-12		
SCALE		
SHEET 1 OF 1		

TITLE

MEMORY EXTENSION CONTROL

SIZE	CODE	NUMBER	REV.
A	ML	MC12-0	T

DIST.

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PRA MA Ø0 (1)L → M617 M22 A1 → E1 MXB BMA Ø0 (1)H

PRA MA Ø1 (1)L → M617 M22 F1 → L1 MXB BMA Ø1 (1)H

PRB MA Ø2 (1)L → M617 M22 M1 → S1 MXB BMA Ø2 (1)H

PRB MA Ø3 (1)L → M617 M22 D2 → J2 MXB BMA Ø3 (1)H

PRC MA Ø4 (1)L → M617 M22 K2 → P2 MXB BMA Ø4 (1)H

PRC MA Ø5 (1)L → M617 M22 R2 → V2 MXB BMA Ø5 (1)H
+3V M22U1_H → U2

PRD MA Ø6 (1)L → M617 M23 A1 → E1 MXB BMA Ø6 (1)H

PRD MA Ø7 (1)L → M617 M23 F1 → L1 MXB BMA Ø7 (1)H

PRE MA Ø8 (1)L → M617 M23 M1 → S1 MXB BMA Ø8 (1)H

PRE MA Ø9 (1)L → M617 M23 D2 → J2 MXB BMA Ø9 (1)H

PRF MA 1Ø (1)L → M617 M23 K2 → P2 MXB BMA 1Ø (1)H

PRF MA 11 (1)L → M617 M23 R2 → V2 MXB BMA 11 (1)H
+3V M23U1_H → U2

PRA MB Ø0 (Ø)L → M617 M24 A1 → E1 MXB MCBMB Ø0 (Ø)H

PRA MB Ø1 (Ø)L → M617 M24 F1 → L1 MXB MCBMB Ø1 (Ø)H

PRB MB Ø2 (Ø)L → M617 M24 M1 → S1 MXB MCBMB Ø2 (Ø)H

PRB MB Ø3 (Ø)L → M617 M24 D2 → J2 MXB MCBMB Ø3 (Ø)H

PRC MB Ø4 (Ø)L → M617 M24 K2 → P2 MXB MCBMB Ø4 (Ø)H

PRC MB Ø5 (Ø)L → M617 M24 P2 → V2 MXB MCBMB Ø5 (Ø)H
+3V M24U1_H → U2

PRD MB Ø6 (Ø)L → M617 M25 A1 → E1 MXB MCBMB Ø6 (Ø)H

PRD MB Ø7 (Ø)L → M617 M25 F1 → L1 MXB MCBMB Ø7 (Ø)H

PRE MB Ø8 (Ø)L → M617 M25 M1 → S1 MXB MCBMB Ø8 (Ø)H

PRE MB Ø9 (Ø)L → M617 M25 D2 → J2 MXB MCBMB Ø9 (Ø)H

PRF MB 1Ø (Ø)L → M617 M25 K2 → P2 MXB MCBMB 1Ø (Ø)H

PRF MB 11 (Ø)L → M617 M25 R2 → V2 MXB MCBMB 11 (Ø)H
+3V M25U1_H → U2

CPTP START MEMORY L → M617 M26 A1
+3V M26U1_H → D1 → E1 MXB START MEMORY H

CS1 DO (1)H → M720 H11 S2
CPS FETCH (1)H → T2
U2 → MXB DO FETCH L

CPT CYCLE DONE (Ø)H → M119 LØ3 M1
CPT TS2 (1)H → N1
MXB DO FETCH L → P1
R1
R2
S2
T2
+3V LØ3U1_H → U2

M119 LØ3 V2 → M113 L21 H1
J1
CPTP START MEMORY H → K1

M720 H11 V2 → F2 → MCT STROBE L

J2 → 5 USEC → D2 → MCT MEM DONE L

NON EXISTANT MEMORY DETECT

+3V M27V1_H → M617 M26 F1
H1
J1
CPTP TP3 H → D2
CST EN MEM (1)H → E2
M113 L21 F2 → MXB MEM TP3 L → K1
L1 MXB MEM TP3 H

REVISIONS		
CHK	CHANGE NO.	REV.
JB	EP12-00001	A
	ADS	
	J SCANLAN 3/13/69	
PD	EP12-00002	B
	A WASHINGTON 5/20/69	
	J SCANLAN 5/22/69	
GH	EP12-00026	C
	S. GOLDSBY 9-1-70	
	D. MACKLIN 9-2-70	
	EP12-00030	D

DRN D SHEPARD	DATE 2/20/69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D J BISONETE	DATE 2/20/69	
ENG L GALE	DATE 2/20/69	TITLE MEM EXTN BUFFER
PROJ ENG L GALE	DATE 2/20/69	
PROD D CALL	DATE 2/20/69	
FIRST USED ON MC12		SIZE D · CODE BS · NUMBER MC12-Ø-MXB · REV. D
SCALE		
SHEET 1 OF 1		DIST.

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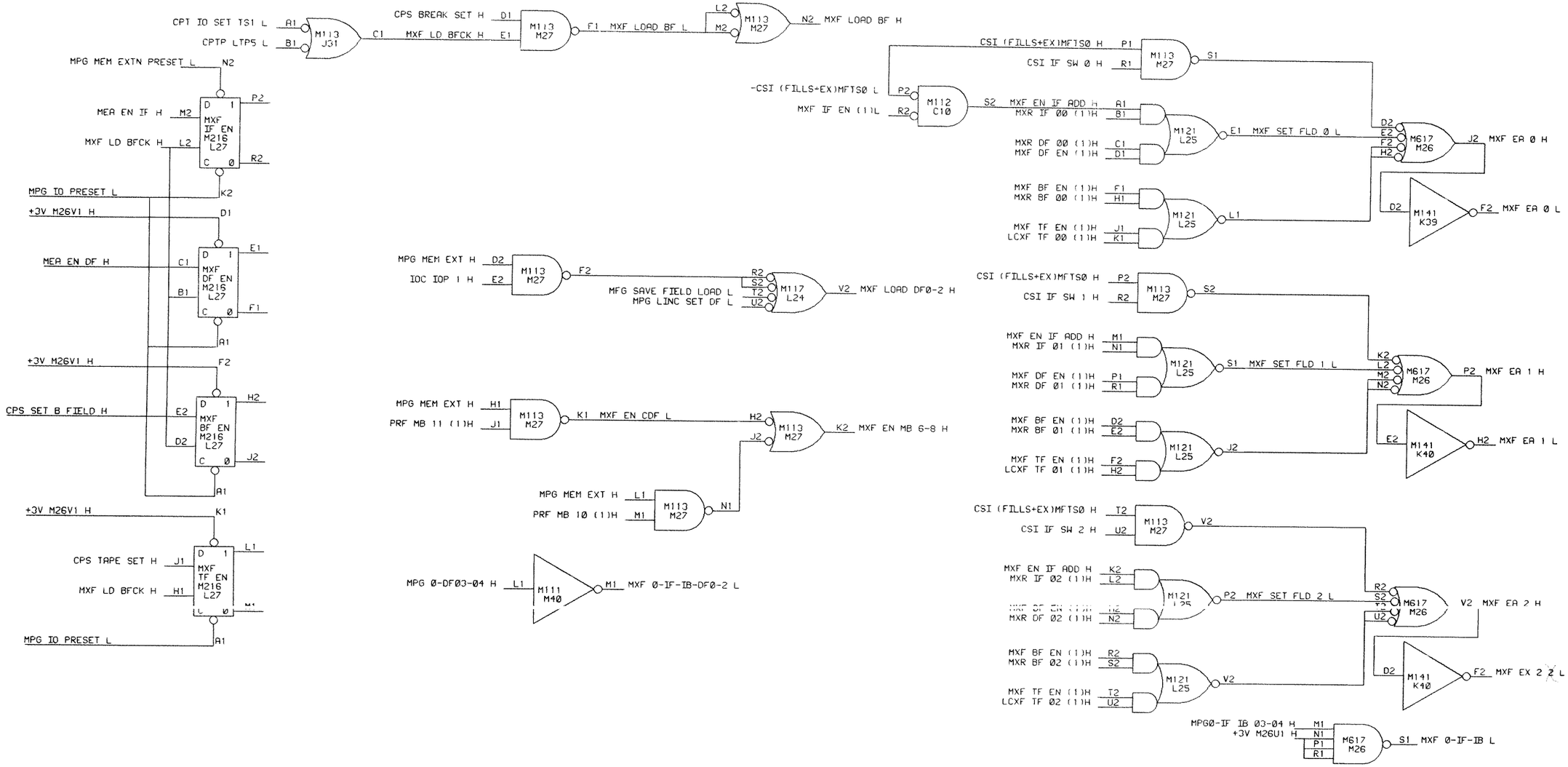

REVISIONS			REVISIONS			REVISIONS		
CHK	CHANGE NO.	REV.	CHK	CHANGE NO.	REV.	CHK	CHANGE NO.	REV.
	EM12-00001	A	NR	EP12-00007	E	GH	EP12-00026	K
	ADS			A.WASHINGTON 8/15/69			S. GOLDSBY 9-1-70	
	J. SCANLAN 3/13/69			L. GALE 8/20/69			D. MACKLIN 9-2-70	
	EP12-00003	B	NR	EP12-00009	F		EP12-00030	L
	A.WASHINGTON 5/20/69			A.WASHINGTON 8/20/69				
	J. SCANLAN 5/22/69			J. SCANLAN 8/20/69				
	EP12-00004	C		EM12-00015	H			
	A.WASHINGTON 7/9/69			K. BOGGS 10/14/69				
	J. SCANLAN			J. SCANLAN 10/17/69				
NR	EP12-00006	D	FV	EP12-00021	J			
	A.WASHINGTON 8/6/69			D. SOUTHER 6/17/70				
	J. SCANLAN 8/6/69			J.SCANLAN 6/17/70				

DRN. D. SHEPARD	DATE 2/20/69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
CHK'D. J. BISONETE	DATE 2/20/69	TITLE MEM EXTN FIELD	
ENG. L. GALE	DATE 2/20/69		
PROJ. ENG. L. GALE	DATE 2/20/69		
PROD. D. CALL	DATE 2/20/69		
FIRST USED ON MC12		SIZE D	CODE BS
SCALE		NUMBER MC12-0-MXF	REV. L
SHEET 1 OF 1		DIST.	

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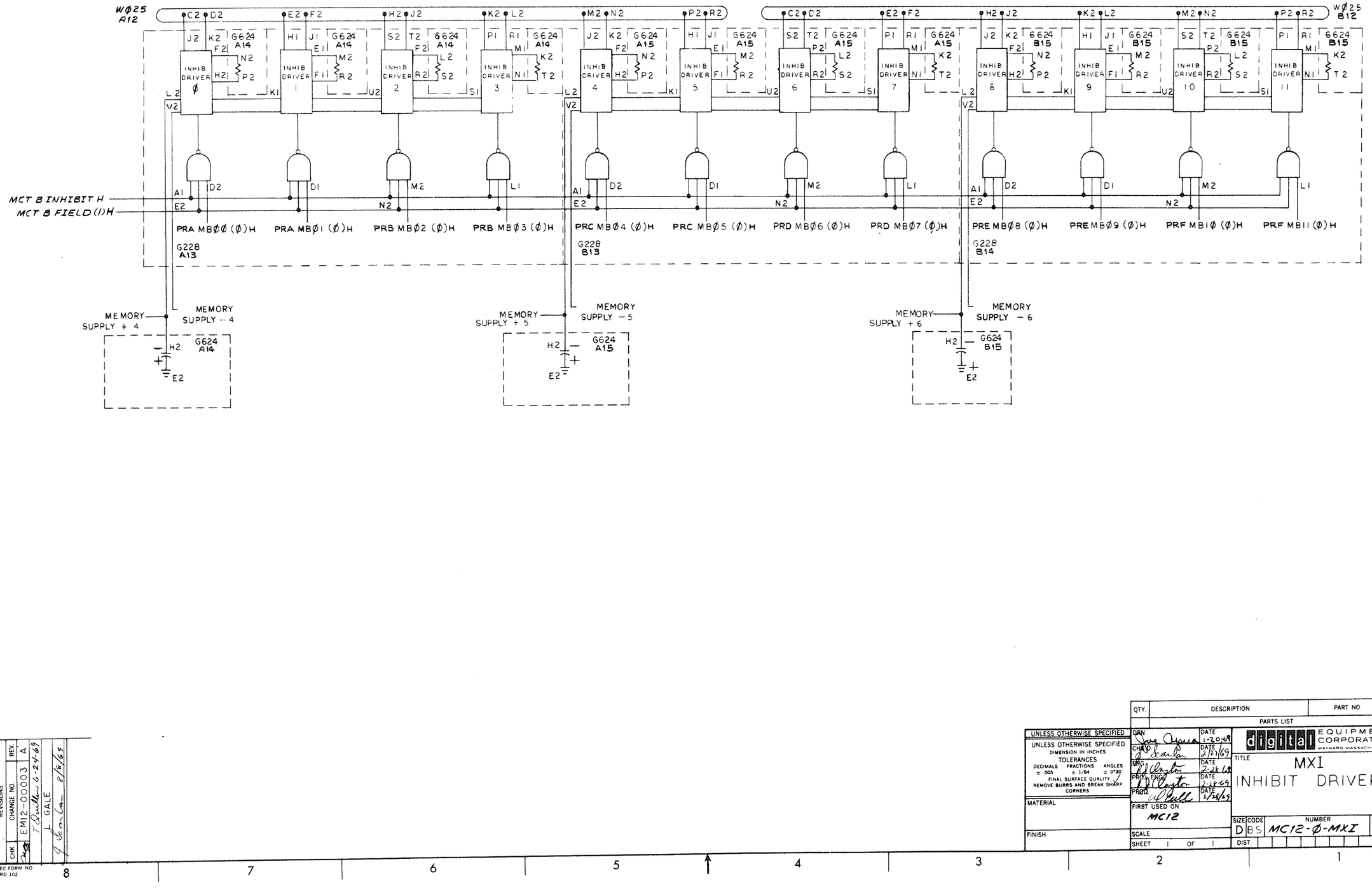

REVISIONS			
CHK.	CHANGE NO.	REV.	
TS	EM12-00003	A	T. Sullivan 6-24-69
			L. GALE
			J. Garcia 8/6/65

UNLESS OTHERWISE SPECIFIED
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES DECIMALS FRACTIONS ANGLES ± .005 ± 1/64 ± 0°30' FINAL SURFACE QUALITY √ REMOVE BURRS AND BREAK SHARP CORNERS
MATERIAL
FINISH

QTY.	DESCRIPTION	PART NO.	ITEM NO.
	PARTS LIST		

DRN	Jose Garcia	DATE 1-30-69
CHKD	J. Garcia	DATE 2/27/69
ENG	D. Clayton	DATE 2-28-69
PROJ. ENGR	D. Clayton	DATE 2-28-69
PROD	W. Bell	DATE 3/28/69

FIRST USED ON MC12

SCALE

SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE
MXI
INHIBIT DRIVERS

SIZE	CODE	NUMBER	REV
D	BS	MC12-Ø-MXI	A

DIST.

REV A
SIZE D CODE BS NUMBER MC12-Ø-MXI

DEC FORM NO DRD 102

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M121 L23 U1 MXR SF 00 (1)L

M121 L23 V1 MXR SF 01 (1)L

M117 L24 U1 MXR SF 02 (1)L

+3V M22V1 H — MXR SF 00 M216 M30 — MXR IF 00 (1)H, MPG LOAD SF H, +3V M23V1 H

+3V M22V1 H — MXR SF 01 M216 M30 — MXR IF 01 (1)H, MPG LOAD SF H, +3V M23V1 H

+3V M22V1 H — MXR SF 02 M216 M30 — MXR IF 02 (1)H, MPG LOAD SF H, +3V M23V1 H

+3V M22V1 H — MXR SF 03 M216 M30 — MXR DF 00 (1)H, MPG LOAD SF H, +3V M23V1 H

+3V M22V1 H — MXR SF 04 M216 M30 — MXR DF 01 (1)H, MPG LOAD SF H, +3V M23V1 H

+3V M22V1 H — MXR SF 05 M216 M30 — MXR DF 02 (1)H, MPG LOAD SF H, +3V M23V1 H

MXF EN IF SW H, CSI IF SW 0 H, MXF EN MB 6-8 H, PRD MB 06 (1)H, MXR EN MB 7-9 H, PRD MB 07 (1)H, MPG EN SAVE FIELD H, MXR SF 01 (1)H → M169 M32 → SRF IBØØ L

RCC ST LSW EN H, CSI IF SW 0 H → M113 M27

A1 MXR SET IB 00 H, MPG LOAD IB 00-02 H → MXR IB 00 M216 M31

MXR IF 00 M216 M31 (MXF 0-IF-IB-0-2 L)

MXF 0-IF-IB-0-2 L

SRF SET DF 00-2 L

MXR SET IB 00 H, -MPG EN SAVE FIELD H, MXR SF 03 (1)H, MPG EN SAVE FIELD H → M121 M28 → MXF LOAD DF0-2 H

MXR DF 00 M216 M29 → SRF CLR IF ØØ L

+3V M25V1 H — MXR BF 00 M216 M29 — IOB EXT DA 00 H, MXF LOAD BF H

C1 H2, MXF EN MB 6-8 H, PRD MB 07 (1)H, MXR EN MB 7-9 H, PRE MB 08 (1)H, MPG EN SAVE FIELD H, MXR SF 01 (1)H → M169 M32 → SRF IBØ1 L

RCC ST LSW EN H, CSI IF SW 1 H → M113 N40

K1 MXR SET IB 01 H, MPG LOAD IB 00-02 H → MXR IB 01 M216 M31

MXR IF 01 M216 M31 (MXF 0-IF-IB-0-2 L)

MXF 0-IF-IB-0-2 L

SRF SET DF 01-2 L

MXR SET IB 01 H, -MPG EN SAVE FIELD H, MXR SF 04 (1)H, MPG EN SAVE FIELD H → M121 M28 → MXF LOAD DF0-2 H

MXR DF 01 M216 M29 → SRF CLR DF Ø1 L

+3V M25V1 H — MXR BF 01 M216 M29 — IOB EXT DA 01 H, MXF LOAD BF H

R2 S1, MXF EN MB 6-8 H, PRE MB 08 (1)H, MXR EN MB 7-9 H, PRE MB 09 (1)H, MPG EN SAVE FIELD H, MXR SF 02 (1)H → M169 M32 → SRF IBØ2 L

RCC ST LSW EN H, CSI IF SW 2 H → M113 N40

M1 MXR SET IB 02 H, MPG LOAD IB 00-02 H → MXR IB 02 M216 M31

MXR IF 02 M216 M31 (MXF 0-IF-IB-0-2 L)

MXF 0-IF-IB-0-2 L

MPG LOAD IF 00-02 H

SRF SET DF 02-2 L

MXR SET IB 02 H, -MPG EN SAVE FIELD H, MXR SF 05 (1)H, MPG EN SAVE FIELD H → M121 M28 → MXF LOAD DF0-2 H

MXR DF 02 M216 M29 → SRF CLR DF Ø2 L

+3V M25V1 H — MXR BF 02 M216 M29 — IOB EXT DA 02 H, MXF LOAD BF H

CON AFI REQ OK L → M121 L25 U1

R2 V1, MXF EN MB 6-8 H, MXF EN MB 6-8 H, P2 U1, MXR EN MB 7-9 H, N2 T2, MPG EN SAVE FIELD H, MPG EN SAVE FIELD H, M2 S2 → M169 M32 → V2 -MXR EN MB 7-9 H → M111 K09 → V2 MXR EN MB 7-9 H

REVISIONS					
CHK	CHANGE NO.	REV.	CHK	CHANGE NO.	REV
JB	EP12-00001	A	JW	EP12-00036	E
	ADS			SCANLAN	
	J. SCANLAN 3/13/69				
	EP12-00003	B			
	A.WASHINGTON 6/18/69		JW	EP12-00046	F
	L. GALE 6/20/69			IKNAIAN	
NR	EP12-00004	C			
	A.WASHINGTON 7-9-69				
	L. GALE 7-15-69				
	EP12-00030	D			

DRN. D. SHEPARD	DATE 2/20/69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. J. BISONETE	DATE 2/20/69	
ENG. L. GALE	DATE 2/20/69	TITLE: MEM EXTN REGISTER
PROJ. ENG. L. GALE	DATE 2/20/69	
PROD. D. CALL	DATE 2/20/69	
FIRST USED ON: MC12		SIZE D; CODE BS; NUMBER MC12-0-MXR; REV. F
SCALE		DIST.
SHEET 1 OF 1		

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G611 C13 D13

G221 C14

CV2 CU2 CT2 CS2 CR2 CP2 CN2 CM2 CL2 CK2 CJ2 CH2 CF2 CE2 CD2 CC2

7Ø 71 72 73 74 75 76 77
6Ø 67
5Ø 57
4Ø 47
3Ø 37
2Ø 27
1Ø 17
ØØ Ø1 Ø2 Ø3 Ø4 Ø5 Ø6 Ø7

PRA MA Ø1(1)H — H2
PRB MA Ø2(1)H — F2
MCT NEG CLAMP H — V2
PRA MA ØØ(1)H — E2, D2, T2
G221 C15 — V2

PRA MA Ø1(1)H — H2
PRB MA Ø2(1)H — F2
PRA MA ØØ(Ø)H — E2, D2
MCT B FIELD(1)H — D2
T2
MCT X R/W SOURCE

G610 C11 D11
DC2 DD2 DE2 DF2 DH2 DJ2 DK2 DL2 DM2 DN2 DP2 DR2 DS2 DT2 DU2 DV2

MCT X R/W RETURN — T2

MCT B FIELD(1)H — D2
PRB MA Ø3(Ø)H — E2
PRB MA Ø3(1)H — D2, E2

PRC MA Ø5(1)H — F2
PRC MA ØØ(1)H — H2
G221 DØ9 — V2
PRC MA Ø5(1)H — F2
PRC MA ØØ(1)H — H2
G221 D1Ø — V2
MCT NEG CLAMP H

REVISIONS			
CHK	CHANGE NO.	REV.	
DGS	EM12-00015	A	L. GALE 10/17/69
FV	EM12-00030	B	T. Sutton 2-3-70
			GALE 3-4-70

DEC FORM NO. DRD 102

QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST			

UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINAL SURFACE QUALITY / REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL

FINISH

DRN	Jose Ibarra	DATE 11-20-69
CHKD	L. Gale	DATE 12/1/69
ENG	L. Gale	DATE 2/28/69
PROJ. ENG	L. Gale	DATE 2/28/69
PROD	W. Cahill	DATE 3/4/69

FIRST USED ON: MC12

SCALE

SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: MXX X AXIS SELECTION

SIZE D | CODE BS | NUMBER MC12-Ø-MXX | REV. B

DIST.

SIZE D BS MC12-Ø-MXX REV B

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G221 C10

G610 C11 & D11

CV2 CU2 CT2 CS2 CR2 CP2 CN2 CM2 CL2 CK2 CJ2 CH2 CF2 CE2 CD2 CC2

70 71 72 73 74 75 76 77
60 61 62 63 64 65 66 67
50 51 52 53 54 55 56 57
40 41 42 43 44 45 46 47
30 31 32 33 34 35 36 37
20 21 22 23 24 25 26 27
10 11 12 13 14 15 16 17
00 01 02 03 04 05 06 07

DC2 DD2 DE2 DF2 DH2 DJ2 DK2 DL2 DM2 DN2 DP2 DR2 DS2 DT2 DU2 DV2

G611 C13 D13

PRD MAØ7 (1)H
PRE MAØ8 (1)H
MCT NEG CLAMP H
PRD MA Ø6 (1)H
G221 CØ9
PRD MAØ7 (1)H
PRE MAØ8 (1)H
PRD MA Ø6(Ø)H
MCT B FIELD (1)H
MCT Y R/W SOURCE
MCT Y R/W RETURN
MCT B FIELD(1)H
PRE MAØ9(Ø)H
PRF MA11 (1)H
PRF MA 1Ø(1)H
G221 D14
PRE MA Ø9(1)H
PRF MA 11(1)H
PRF MA 1Ø(1)H
G221 D15
MCT NEG CLAMP

QTY	DESCRIPTION	PART NO	ITEM NO

PARTS LIST

REVISIONS	REV	CHANGE NO	CHK
	A	EM12-30030	

UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINAL SURFACE QUALITY / REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL

FINISH

		DATE
DRN		1-30-69
CHK'D		2-2-69
ENG		2/28/69
PROJ ENG		2/28/69
PROD		3/4/69

FIRST USED ON MC12

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE MXY
Y AXIS SELECTION

SIZE	CODE	NUMBER	REV
D	BS	MC12-Ø-MXY	

SCALE

SHEET 1 OF 1

DIST.

DEC FORM NO DRD 102

...manufacture or sale of items without written permission.

MASTER DRAWING LIST

DWG. NO.	REV. LET.	NO. OF SHEETS	TITLE
A-ML-PDP 12-0	REF.		PDP-12 SYSTEMS
D-MU-EM12-0-1	REF		MODULE UTILIZATION MEM
D-MU-EM12-0-2	REF		MODULE UTILIZATION MEM
K-WL-EM12-0-3	REF		WIRE LIST
A-PL-EM12-0-1	REF		MODULE UTILIZATION MEM PL.
A-PL-EM12-0-2	REF		MODULE UTILIZATION MEM PL.
D-FD-TC12-0-10	B	1	TAPE PROCESSOR MJR. ST. FLOW
D-FD-TC12-0-11	D	1	TAPE INST SETUP TIMING
D-FD-TC12-0-12	C	1	SEARCH TIMING
D-FD-TC12-0-13	C	1	BLOCK MODE READING
D-FD-TC12-0-14	C	1	BLOCK MODE WRITE
D-FD-TC12-0-15	C	1	BLOCK MODE CHECKING
D-FD-TC12-0-16	A	1	MARK TIMING
D-BS-TC12-0-LCS	E	1	TAPE CONTROL STATES
D-BS-TC12-0-LCX	B	1	TAPE EXTENDED OPERATIONS
D-BS-TC12-0-LCXF	A	1	TAPE EXTENDED FIELDS
D-BS-TC12-0-LGP	C	1	TAPE GROUP COUNTER
D-BS-TC12-0-LIN		1	TAPE INSTRUCTION
D-BS-TC12-0-LIP	E	1	INTERPROCESSOR SIGNALS
D-BS-TC12-0-LMU	B	1	TAPE UNIT AND MOTION
D-BS-TC12-0-LRE	C	1	TAPE REG ENABLE CONTROL
D-BS-TC12-0-LRL	A	1	TAPE REG LOAD CONTROL
D-BS-TC12-0-LTC	C	1	TRANSPORT CONTROL
D-BS-TC12-0-LTD	H	1	TAPE DELAYS
D-BS-TC12-0-LTM	A	1	TAPE MAINT
D-BS-TC12-0-LTMR	A	1	TAPE MAINT REG
D-BS-TC12-0-LTR	B	1	TAPE READERS-WRITERS
D-BS-TC12-0-LTRA	E	1	LTRA BITS 0 & 1
D-BS-TC12-0-LTRB	D	1	LTRB BITS 2 & 3
D-BS-TC12-0-LTRC	C	1	LTRC BITS 4 & 5
D-BS-TC12-0-LTRD	B	1	LTRD BITS 6 & 7
D-BS-TC12-0-LTRE	B	1	LTRE BITS 8 & 9
D-BS-TC12-0-LTRF	E	1	LTRF BITS 10 & 11

REVISIONS			
REV.	DATE	CHG. NO.	APP'D.
A	3/69	EM12-01	L.G.
B	5/69	EM12-02	L.G.
C	6/69	EM12-03	L.G.
D	6/69	EM12-04	L.G.
E	6/69	EM12-5	L.G.
F	7/69	EM12-7	L.G.
H	8/69	EM12-09	L.G.
J	8/69	EM12-10	L.G.
K	9/69	EM12-11	L.G.
L	9/69	EM12-15	L.G.
M	10/69	EM12-17	L.G.
N	12/69	EM12-19	L.G.
P	1/70	EM12-22	L.G.
R	2/70	EM12-30	L.G.
S	2/70	EM12-32	L.G.

DRN. J. APREA	DATE 3/7/69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. R. HUTNAK	DATE 3/7/69	
ENG. L. Gale	DATE 3/10/69	TITLE LINC TAPE CONTROL
PROJ. ENG. L. Gale	DATE 3/10/69	
PROD. W Call	DATE 3/10/69	
FIRST USED ON PDP-12		SIZE A / CODE ML / NUMBER TC12-0 / REV V
SCALE		
SHEET 1 OF 2		DIST.

DEC FORM NO. DRA 103

MASTER DRAWING LIST

DWG. NO.	REV. LET.	NO. OF SHEETS	TITLE
D-BS-TC12-0-LTS	D	1	TAPE STATES
D-BS-TC12-0-LTT	C	1	TAPE TIME PULSES
D-BS-TC12-0-LWN	D	1	TAPE MARK WINDOW

REVISIONS			
REV.	DATE	CHG. NO.	APP'D.
T	7/70	EM12-37	L.G.
U	8/70	EM12-38	L.G.
V	10/70	EM12-41	L.G.

DRN. J. APREA	DATE 3/10/69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. R. Hutnak	DATE 3/10/69	
ENG. L. Gale	DATE 3/10/69	TITLE LINC TAPE CONTROL
PROJ. ENG. L. Gale	DATE 3/10/69	
PROD. W Call	DATE 3/10/69	
FIRST USED ON PDP-12		SIZE A / CODE ML / NUMBER TC12-0 / REV V
SCALE		
SHEET 2 OF 2		DIST.

DEC FORM NO. DRA 103

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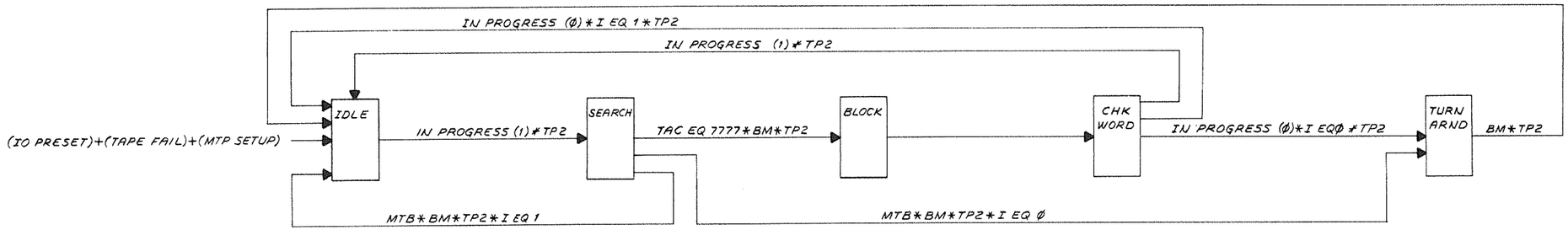

REVISIONS	REV	CHK
CHANGE NO. 00002	A	JMB
T. QUILLIN L. GALE		
EM12-00015	B	JMB
JIMMY Moore 10-5-67		
L. GALE 10/17/67		

UNLESS OTHERWISE SPECIFIED
UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINAL SURFACE QUALITY √
REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL

FINISH

DRN. Joe Aprea	DATE 6 SEPT 68	
CHK'D. E. Lanfer	DATE 9/27/67	
ENG. Edward F.	DATE 2-28-69	
PROJ. ENG. J. Clark	DATE 2-28-69	
PROD. Stan C	DATE 3/28/67	

FIRST USED ON TC12

SCALE

SHEET 1 OF 1

QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST			

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE
TAPE PROCESSOR
MJR. ST. FLOW

SIZE	CODE	NUMBER	REV.
D	FD	TC12-Ø-1Ø	B

DIST.

DEC FORM NO. DRD 102A

SIZE D | CODE FD | NUMBER TC12-Ø-1Ø | REV B

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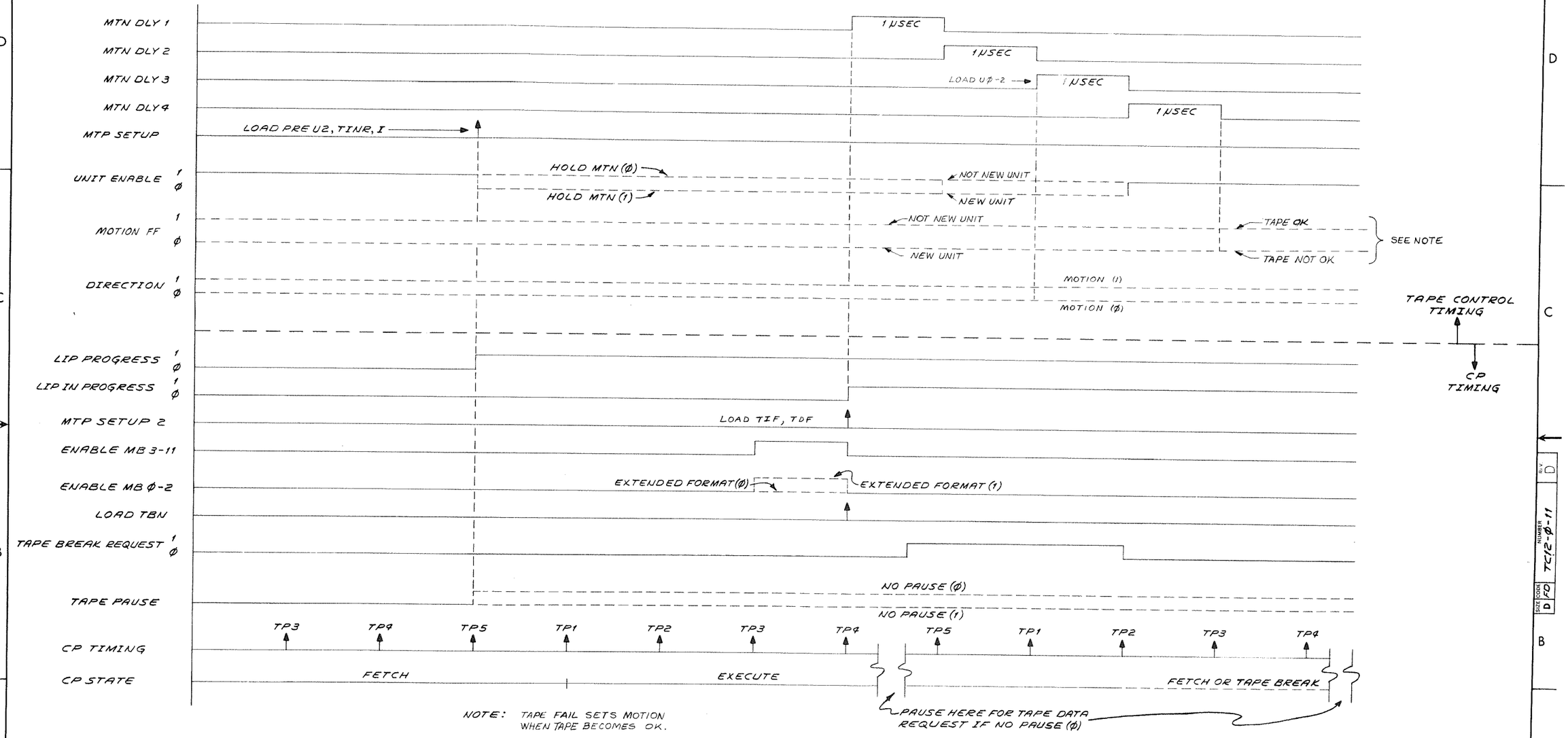

NOTE: TAPE FAIL SETS MOTION WHEN TAPE BECOMES OK.

REVISIONS				
CHK	CHANGE NO.	REV.		
mds	00002	A	T. Burke	L GALE 6/18/69
mds	EM12-00003	B	T. QUINLAN 6-24-69	L.GALE
mds	EM12-00015	C	[illegible] 8/5/69	[illegible] 10/1/69
mds	EM12-00017	D	[illegible] 11-5-69	GALE 11-14-69

PARTS LIST			
QTY.	DESCRIPTION	PART NO.	ITEM NO.

UNLESS OTHERWISE SPECIFIED
UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINAL SURFACE QUALITY √
REMOVE BURRS AND BREAK SHARP CORNERS
MATERIAL
FINISH

DRN.	[illegible]	DATE 11-24-68
CHK'D.	[illegible]	DATE 2/12/69
ENG.	[illegible]	DATE 2-18-69
PROJ. ENG.	[illegible]	DATE 2-18-69
PROD.	[illegible]	DATE 2/24/69

FIRST USED ON TC12
SCALE
SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE
LINC TAPE INST SETUP TIMING

SIZE	CODE	NUMBER	REV.
D	FD	TC12-Ø-11	D

DIST.

DEC FORM NO. DRD 102A

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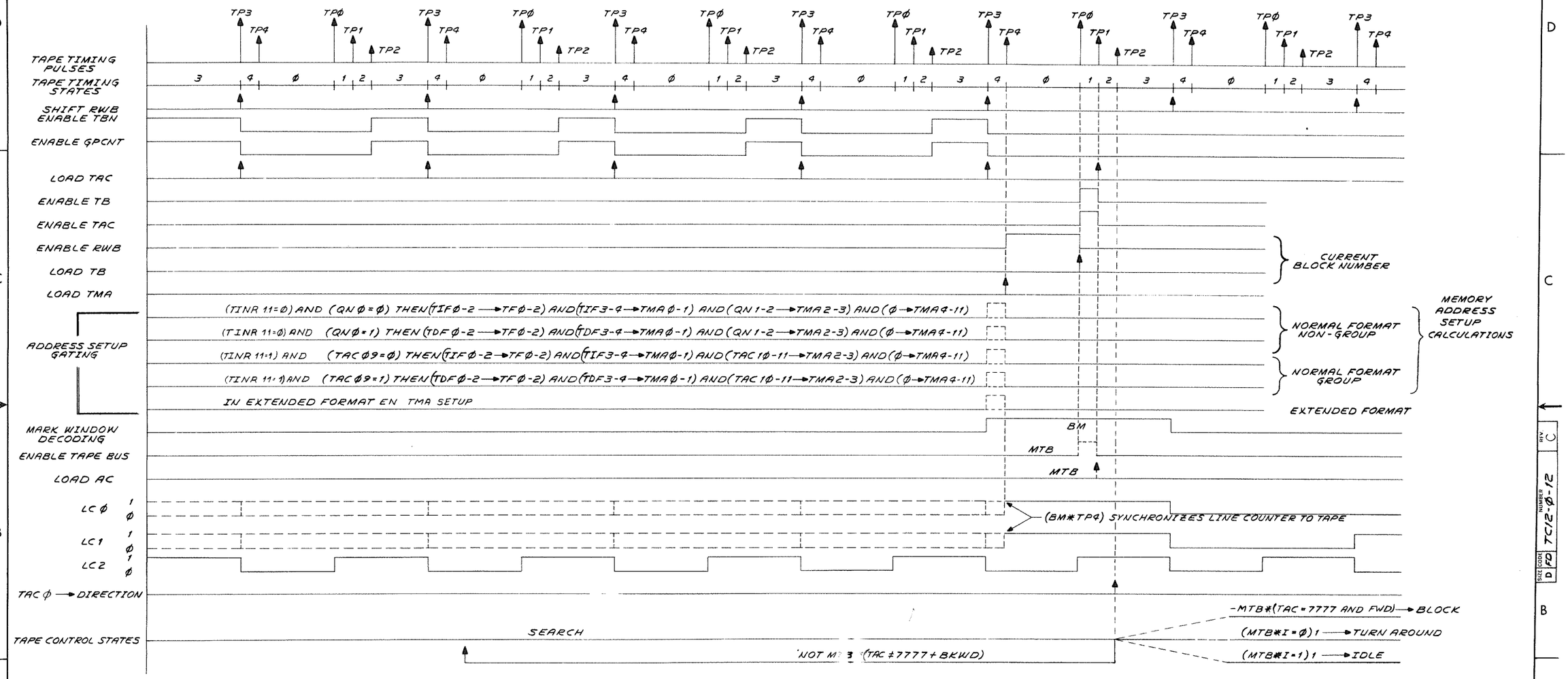

NOTE:
TIMING NOT SHOWN TO SCALE. TPØ & TP3 ARE DERIVED FROM ZERO CROSSINGS OF TAPE TIMING TRACK. TPØ & TP3 ARE SEPARATED BY APPROXIMATELY 15 μSEC. TTS1, TTS2, TTS4 ARE EACH 0.5 μSEC.

REVISIONS	CHK	CHANGE NO.	REV.
		00002	A
T. QUILLIN L. GALE 6/18/68			
		EM12-00003	B
T. QUILLIN 6-24-69 L. GALE			
		EM12-00015	C
L. GALE 8/5/69			
L. GALE 10/7/69			

QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST			

UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINAL SURFACE QUALITY ✓
REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL

FINISH

DRN.		DATE 11-25-68
CHK'D		DATE 2/27/69
ENG.		DATE 2-28-69
PROJ. ENG.		DATE 6-28-69
PROD.		DATE 7/8/69

FIRST USED ON TC12

SCALE

SHEET / OF /

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE
SEARCH TIMING

SIZE	CODE	NUMBER	REV.
D	FD	TC12-Ø-12	C

DIST.

DEC FORM NO. DRD 102A

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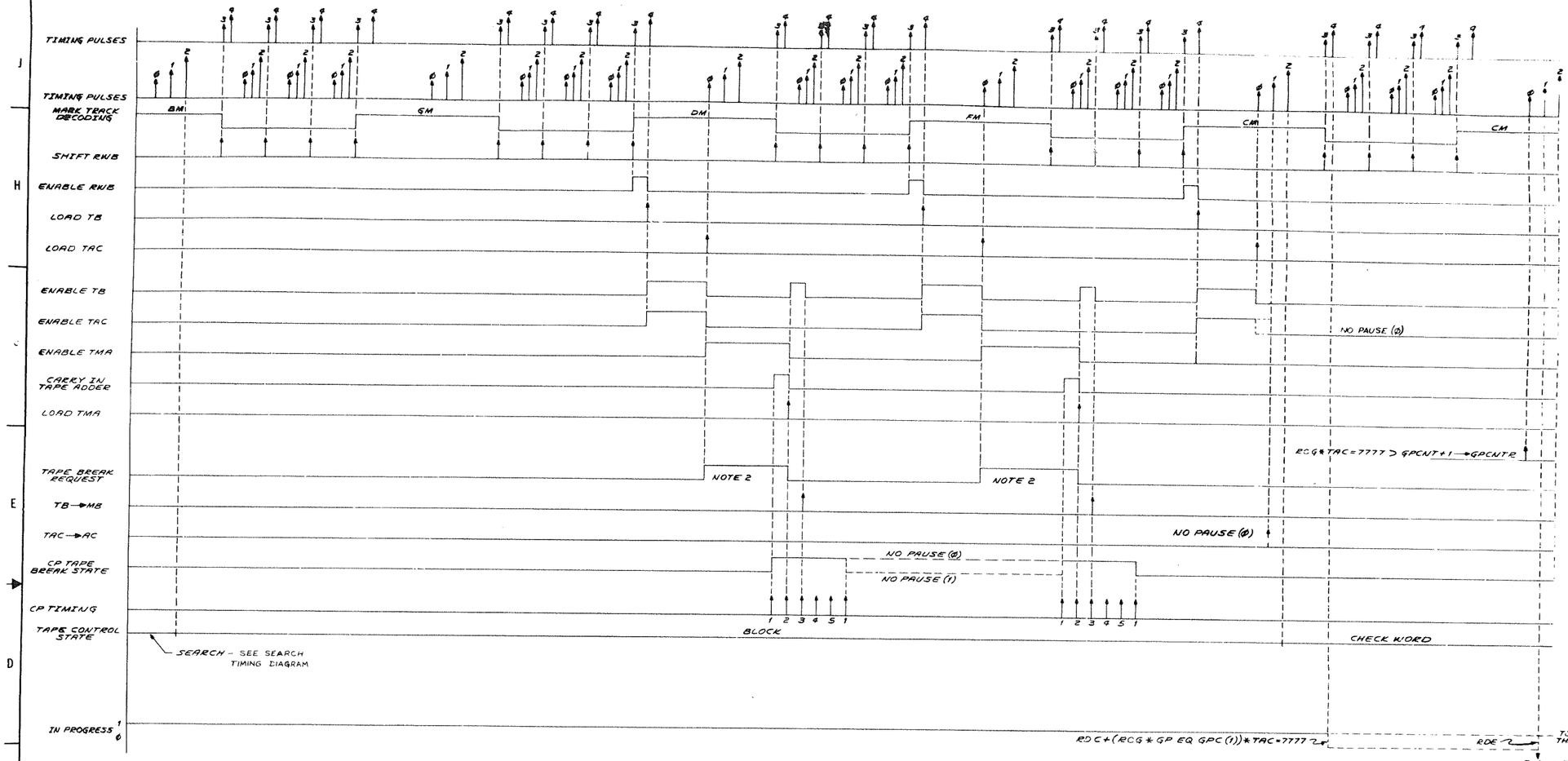

NOTES:
1. TIMING AND MARK TRACK DECODING NOT SHOWN TO SCALE
2. TIMING BETWEEN TAPE BREAK REQUEST AND CP TAPE BREAK STATE IS PROGRAM DEPENDENT

REVISIONS			
DRN	CHANGE NO.	REV.	
	00002	A	
	EMIP-00003	B	
	EMIP-00005	C	

QTY	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINAL SURFACE QUALITY √
REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL

FINISH

DRN L. Gale 11-14-68
CHK [illegible] 12-17-68
ENGR L.G. 1/28/69
PROJ [illegible] 2/6/69
PROJ [illegible] 2/6/69

FIRST USED ON
PDP-12

digital EQUIPMENT CORPORATION

TITLE
BLOCK MODE READING

SIZE E | CODE FO | NUMBER TC12-B-13 | REV. C

SCALE

SHEET 1 OF 1

DIST

TC12-B-13

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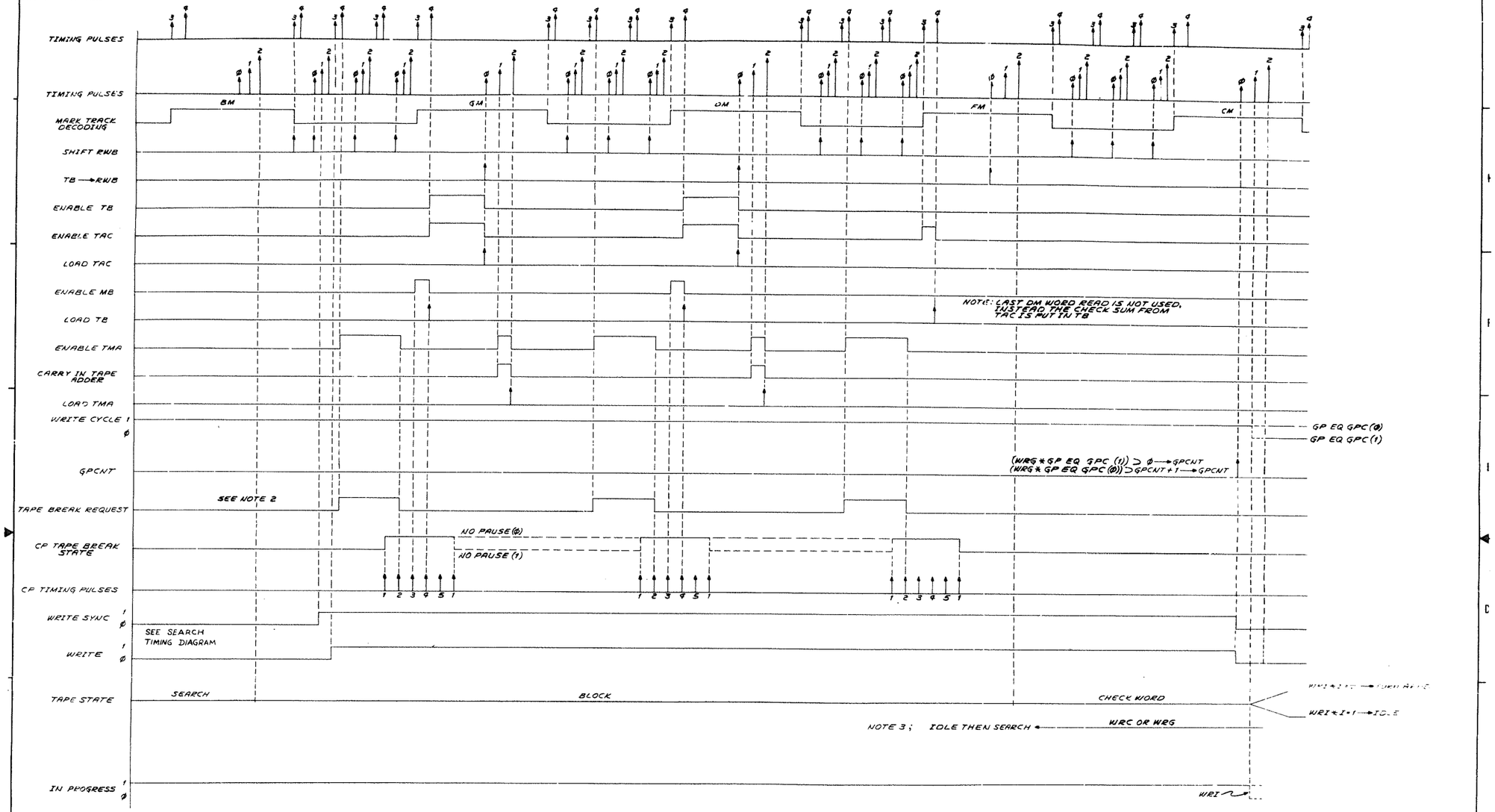

NOTES:

1. TIMING AND MARK TRACK DECODING NOT SHOWN TO SCALE.
2. THE TIME BETWEEN TAPE BREAK REQUEST AND CP TAPE BREAK STATE IS PROGRAM DEPENDENT.
3. PERFORMS CHECK PHASE WHEN WRITE CYCLE GOES TO ZERO.

REVISIONS			
ZONE	CHANGE NO.		REV.
	00001	T. BUTLIN	A
	EM12-00003	T. GAULIN & L. GALE	B
	EM12-00015	L. GALE	C

UNLESS OTHERWISE SPECIFIED	DRN	DATE
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30' FINAL SURFACE QUALITY 63 REMOVE BURRS AND BREAK SHARP CORNERS	CHKD	DATE
	ENGR	DATE
	PROJ ENG	DATE
	PROD	DATE
MATERIAL	FIRST USED ON PDP-12	
FINISH	SCALE	SIZE CODE NUMBER REV. E FD TC12-0-14
	SHEET 1 OF 1	DIST

QTY	DESCRIPTION	PART NO	ITEM NO.
PARTS LIST			

digital EQUIPMENT CORPORATION

TITLE: BLOCK MODE WRITE

DEC FORM NO. DRS 109

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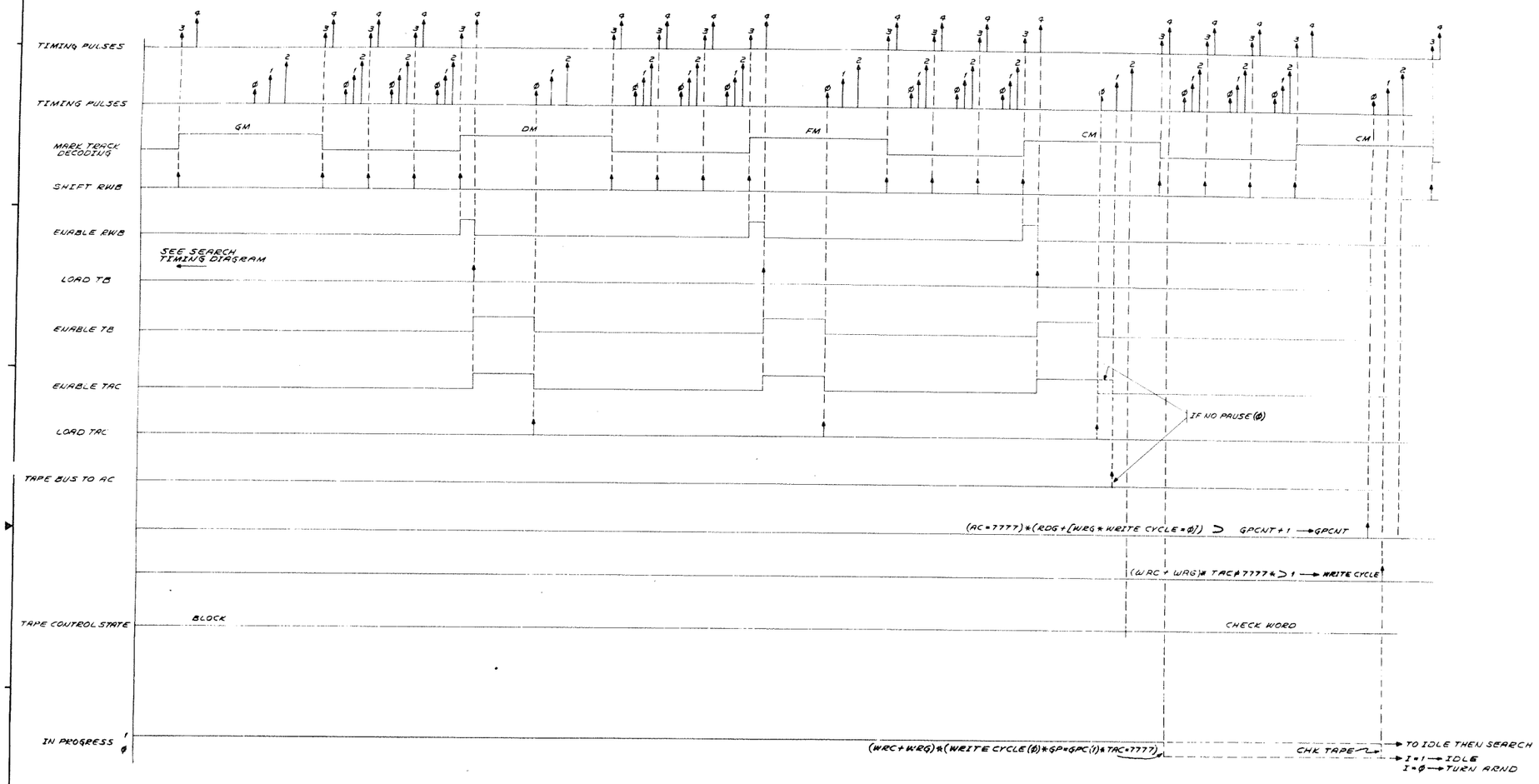

REVISIONS			
DSR	CHANGE NO.	REV.	
[illegible]	10002	A	
[illegible]	EM12-20003	B	
[illegible]	EM12-20012	C	

QTY	DESCRIPTION	PART NO.	ITEM NO.
	PARTS LIST		

UNLESS OTHERWISE SPECIFIED
DIMENSIONS IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINISH SURFACE QUALITY
REMOVE BURRS AND BREAK SHARP CORNERS
MATERIAL
FINISH

DRN. [illegible] DATE 2/3/65
CHK [illegible] DATE 2/3/65
PROJ. MGR. [illegible] DATE 2/3/65
PROG. [illegible] DATE 2/3/65
FIRST USED ON PDP-12
SCALE
SHEET 1 OF 1

digital EQUIPMENT CORPORATION

TITLE
BLOCK MODE CHECKING

SIZE E | CODE FD | NUMBER TC12-Ø-15 | REV. C
DIST

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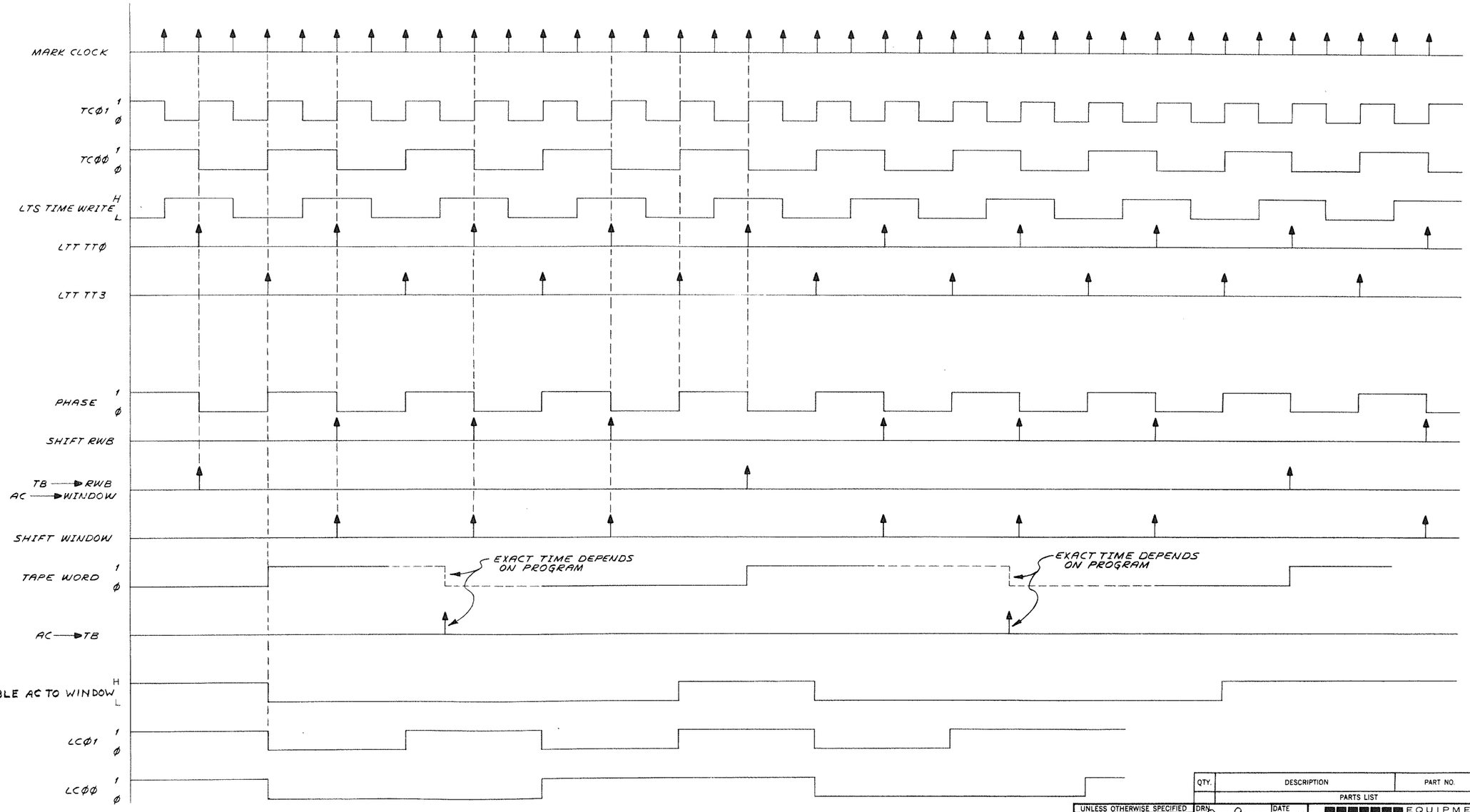

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

REVISIONS	REV	CHK	CHANGE NO.	
	A		EM12-00003	TC12 LINE-2-2-69

L.SCALE — J. Sea... 8/6/68

UNLESS OTHERWISE SPECIFIED

UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINAL SURFACE QUALITY √
REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL

FINISH

DRN	Jon Ayer	DATE 9-21-68
CHK'D	Jon Ayer	DATE 2/27/69
ENG	[illegible]	DATE 2-28-69
PROJ. ENG	[illegible]	DATE 2/28/69
PROD.	[illegible]	DATE 2/28/69

FIRST USED ON: TC12

SCALE

SHEET 1 OF 1

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE: MARK TIMING

SIZE	CODE	NUMBER	REV.
D	FD	TC12-Ø-16	A

DIST.

DEC FORM NO DRD 102A

REV A
NUMBER TC12-Ø-16
SIZE D CODE FD

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LCS TAPE OK L

LCS WRI TAPE H
-LTC WRITE EN H
LTC B UNIT SEL H
M113 B26
M115 C27
M111 C21
F2 LCS TAPE OK H

+3V A34V1 H
PRE AC Ø8 (1)H
LTMR IDT 6152 H
LTT TP1 H
-LCS CLR WRITE H
M121 A34
M216 A30
LCS WRITE SYNC (1)H
LCS WRITE SYNC (Ø)H
LTT TP3 H
LCS WRITE M216 A30

-LTP8 WRITE SEL L
LCX MARK (Ø)L
M112 D16

LCS IDLE (1)L
LCS SEARCH (1)L
LCS TURN ARND (1)H
M113 B24
M112 A33

-LCS TAPE OK L
LCS WRITE CYCLE (Ø)L
M117 B33

LIN WRI L
LIN WRC L
LIN WRG L
M115 A32
LCS WRI TAPE H

LWN CM H
LTS TTS Ø1 (1)H
M121 B32
LCS CLR WRITE L

LRL (BM*SEARCH) H
LIN MTB H
M113 B26
LCS (MTB*BM*SEARCH) L

LIP IN PROGRESS (Ø)H
LCS CHK WRD (1)H
LCS MTP END H

LIN I (Ø)H
LCS SET TURN ARND L
+3V A34V1 H
LCS TURN ARND (1)H
LCS TURN ARND (Ø)H

LCS TAPE GO H
LTT CLOSE WINDOW L
LIP MTP SETUP L
LIP TAPE PRESET L
M115 A32
M111 A35
LCS BLOCK (1)L
LCS TAPE GO L
LCS CHK WRD (1)H
LCS CHK WRD (Ø)H

-LIN MTB H
LCS SEARCH (1)H
LCS BLOCK M216 A30

LCS CHK WRD (1)H
LIP IN PROGRESS (1)H
LIN I (1)H
LCS MTP END H
M160 B29

LGP GP EQ GPC (1)H
LCS WRITE CYCLE (1)H
LIN TAC EQ 7777 H
LCS WRITE CYCLE (Ø)H
M121 A34
LIP MTP SETUP L
M216 A28
LCS WRITE CYCLE (1)H
LCS WRITE CYCLE (Ø)H
LTT TP1 H
LCS (CM*CHK WRD) H
M113 B24
+3V A34V1 H

LWN FM H
LTT TP2 H
LCS BLOCK (1)H
LCS WRITE (1)H
LWN CM L
LCS BLOCK (1)L
M112 C24
LCS (CM*BLOCK) H
LTT TP2 H
LCS CHK WRD (1)L
LWN CM L
LCS (CM*CHK WRD) H
LRL (BM*SEARCH) H
LTT TP2 H
LIN MTB L
LIN TAC EQ (7777*FWD) L
M113 B16
M160 B29

LCS IDLE (1)L
LCS SEARCH M216 A30

LCS TURN ARND (1)L
M113 B26

LTT TP1 H
LIP IN PROGRESS (1)H
LCS IDLE (1)H
M115 A32
M602 B30
LCS IDLE M216 A28

LTT TP1 H
LCS TURN ARND (1)H
LWN BM H
M115 A32
LCS TA CHANGE STATE L

NOTE:
STATE CHANGES ON TRAILING EDGE OF CHANGE STATE PULSE

REVISIONS			REVISIONS		
CHK	CHANGE NO.	REV.	CHK	CHANGE NO.	REV.
	EM12-00003	A	MR	EM12-00017	E
	L GALE				
	EM12-00007	B			
	B KORTLING 8-5-69				
	L GALE				
NR	EM12-00009	C			
	B KORTLING				
	L GALE 8-26-69				
NR	EM12-00015	D			
	K BOGGS 10-14-69				
	J SCANLAN 10-17-69				

DRN. D SHEPARD	DATE 3-10-69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. J BISCHETE	DATE 3-10-69	
ENG. L GALE	DATE 3-10-69	TITLE TAPE CONT STATES + INST
PROJ. ENG. L GALE	DATE 3-10-69	
PROD. D CALL	DATE 3-10-69	
FIRST USED ON TC12		SIZE D / CODE BS / NUMBER TC12-Ø-LCS / REV. E
SCALE		
SHEET 1 OF 1		DIST.

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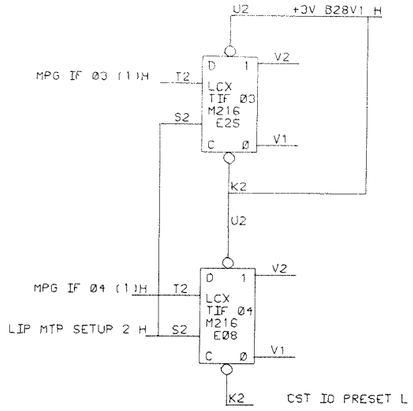
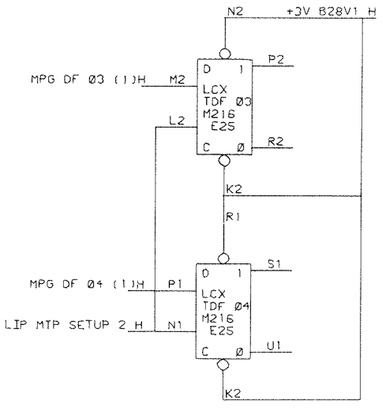
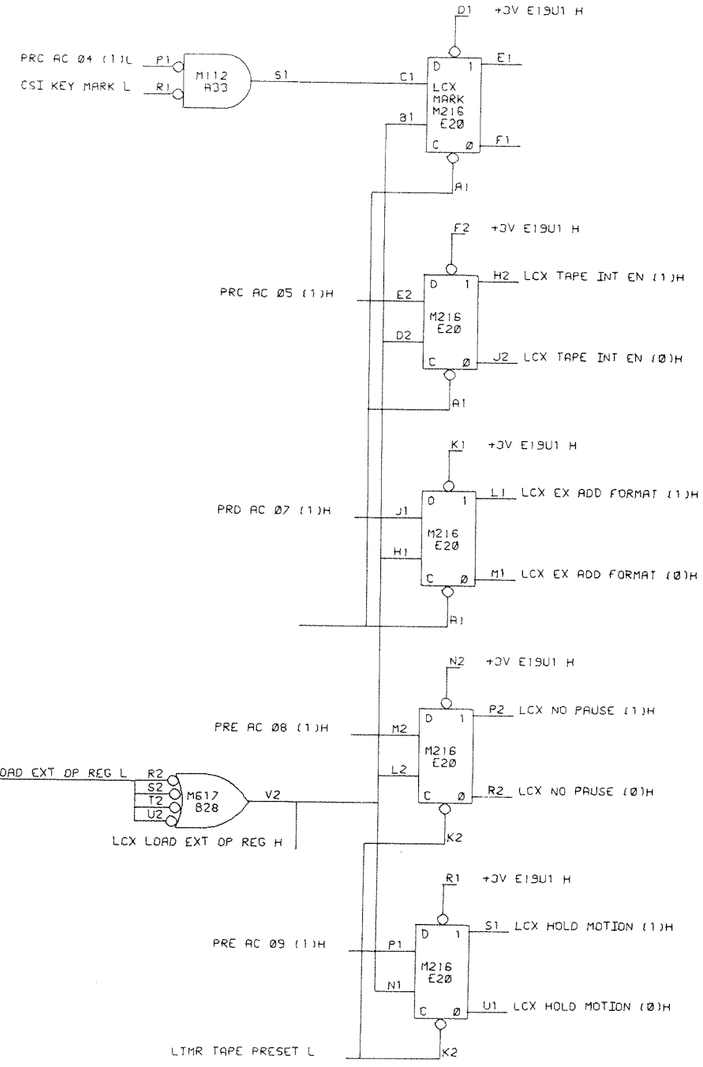
LIP TAPE PRESET L







REVISIONS		
CHK	CHANGE NO.	REV.
	EM12-00002	A
	A. WASHINGTON	
	L. GALE	
	EM12-00007	B
	BRUCE KORTELING	
	L. GALE	

DRN. D.L.SHEPARD	DATE 8-9-69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. J.K. BISONETE	DATE 8-9-69	TITLE: TAPE EXTENDED OPERATIONS
ENG. L.GALE	DATE 8-9-69	
PROJ. ENG. L.GALE	DATE 8-9-69	
PROD. D. CALL	DATE 8-9-69	
FIRST USED ON TC12		SIZE D | CODE 85 | NUMBER TC12-0-LCX | REV. B
SCALE		
SHEET 1 OF 1		DIST.

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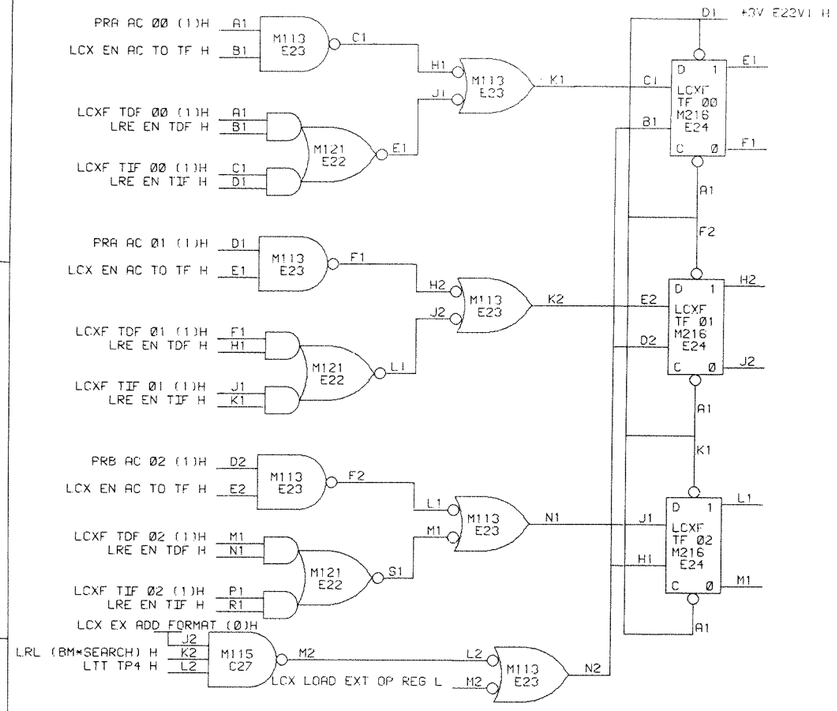

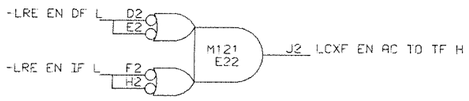

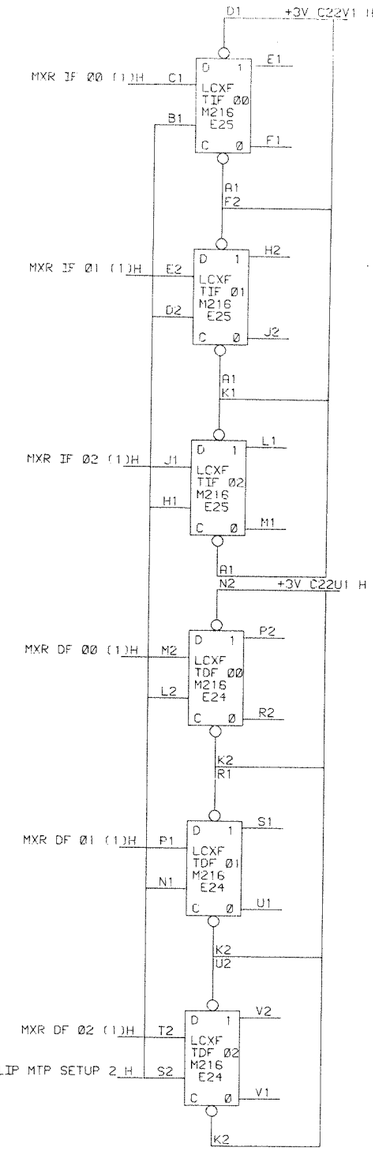

REVISIONS		
CHK	CHANGE NO.	REV.
	EM12-00002	

DRN. D.J.SHEPARD	DATE 3-9-69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
CHK'D. J.K.BISONETE	DATE 3-9-69	TITLE TAPE EXTENDED FIELDS	
ENG. L.GALE	DATE 3-9-69		
PROJ. ENG. L.GALE	DATE 3-9-69		
PROD. D.CALL	DATE 3-9-69		
FIRST USED ON TC12		SIZE D / CODE BS / NUMBER TC12-0-LCXF / REV. A	
SCALE		DIST.	
SHEET 1 OF 1			

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LGP GPCNT 2 (1)H K1
LGP GPCNT 1 (1)H L1
LGP GPCNT Ø (Ø)H M1
M115 C25
N1 L2
M113 A36
N2 C1
M2
LGP GPCNT Ø (1)H L3
M113 A36
N1

D1 +3V B32U1 H
LGP GPCNT1Ø M216 B31
E1 LGP GP ØØ (Ø)H A1 B1
M121 B32
LGP GP ØØ (1)H C1 D1
F1
B1
A1

LGP GPCNT 1 (Ø)L H2
LGP GPCNT 2 (Ø)L J2
M113 A36
K2

F2 +3V B32U1 H
LGP GPCNT 1 (Ø)H D2
LGP GPCNT 2 (Ø)H E2
LGP GPCNT 1 (1)H F2
LGP GPCNT 2 (1)H H2
M121 B32
J2
LGP GPCNT1 M216 B31
H2 LGP GP Ø1 (Ø)H F1 H1
M121 B32
LGP GP Ø1 (1)H J1 K1
E2 D2 J2 A1

K1 +3V B32U1 H
LGP GPCNT 2 (Ø)H J1
LGP COUNT GPCNT H H1
LGP GPCNT2 M216 B31
L1 LGP GP Ø2 (Ø)H M1 N1
M121 B32
LGP GP Ø2 (1)H P1 R1
M1 A1

U2 M111 A35 V2 LGP Ø TO GPCNT L

LIP MTP SETUP L P1 R1
M113 A36
S1

LIN WRG H D2
LCS WRITE CYCLE (1)H E2
LGP GP EQ GPC (1)H F2
LGP GPCNT STROBE H H2
M117 B35
J2

N2
PRA MB ØØ (1)H M2
LGP GP Ø M216 B31
L2 P2 R2
R1 K2

PRA MB Ø1 (1)H P1
LGP GP 1 M216 B31
N1 S1 U1
U2 K2

PRA MB Ø2 (1)H T2
LGP GP 2 M216 B31
S2 V2 V1
LIP MTP SETUP 2 H
K2
+3V B32V1 H

LCS WRITE CYCLE (Ø)H H2
LIN WRG H J2
M113 C16
K2

LIN TINR 11 (Ø)L P2
R2
M113 A36
S2
A1 B1 C1 D1
M115 C25
L1 S1
M121 B32

+3V A31U1 H
U2
LGP GP EQ GPC M216 B37
T2 V2 S2 V1
LTT TP2 H
LIP TAPE PRESET L K2

LGP GPCNT STROBE H E1
LIN TAC EQ 7777 H F1
K2 H1
M115 C25
J1 T2
M113 B38
V2 LGP COUNT GPCNT H
U2
H2
LIN RDC L J2
M113 B16

LIN WRG H K2
LGP GPCNT STROBE H L2
LCS WRITE CYCLE (1)H M2
LGP GP EQ GPC (Ø)H N2
M117 B33
P2

LCS (CM=CHK WRD) H P2
LTT TPØ H R2
M113 B24
S2 LGP GPCNT STROBE L
P2
M111 A35
R2 LGP GPCNT STROBE H

REVISIONS		
CHK	CHANGE NO.	REV.
NR	EM12-0001S	A
	K BOGGS 10-14-69	
	J SCANLAN 10-17-69	
AC	EM12-00037	B
	K KRYSIAK 7-29-70	
	G GALE 7-29-70	
K1	EM12-00041	C

DRN. D SHEPHARD	DATE 3-10-69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
CHK'D. J BISONETE	DATE 3-10-69	TITLE TAPE GROUP COUNTER	
ENG. L GALE	DATE 3-10-69		
PROJ. ENG. L GALE	DATE 3-10-69		
PROD. D CALL	DATE 3-10-69		
FIRST USED ON TC12		SIZE D	CODE BS
SCALE		NUMBER TC12-Ø-LGP	REV. C
SHEET 1 OF 1		DIST.	

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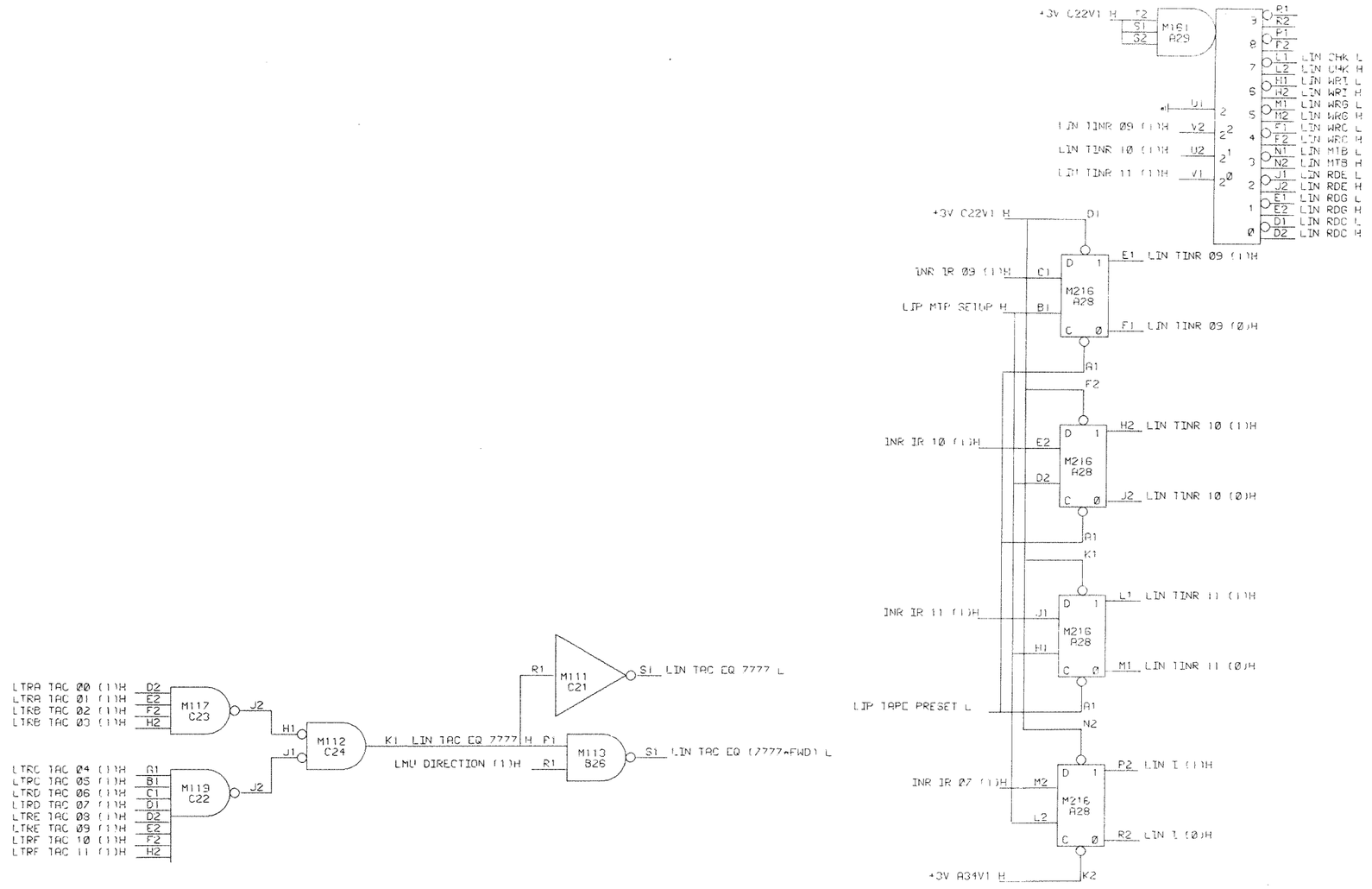

REVISIONS		
CHK	CHANGE NO.	REV.

DRN.	DATE
CHK'D.	DATE
ENG.	DATE
PROJ. ENG.	DATE
PROD.	DATE
FIRST USED ON: TC12	
SCALE	
SHEET 1 OF 1	

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE: TAPE INSTR

SIZE	CODE	NUMBER	REV.
D	BS	TC12-Ø-LIN	ØØ

DIST.

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LIP TAPE PRESET L — A1
LTS LC ØØ (1)L — C1
LTS LC Ø1 (Ø)H — B1
M216 D19 (D 1, C Ø)
F1 LIP TAPE WORD (1)H
E1 LIP TAPE WORD (Ø)H
LTM CLEAR TAPE WORD L — D1

INS MTP H — T2
CPT TS5B (1)H — U2
CPS FETCH B (1)H — V2
M115 B34
V1 — M2
M111 C21
N2 LIP MTP SETUP H
LIP MTP SETUP L

LCS WRI TAPE H — M1
LCS WRITE CYCLE (1)H — N1
LCS BLOCK (1)H — P1
LTS LC ØØ (Ø)H — R1
LTT TP4 H — R2
LTS LC Ø1 (1)H — S2
+3V A31V1 H — T2 / U2
M119 A31
V2

LIN TINR Ø9 (Ø)H — M1
LWN (FM*DM) H — N1
LCS BLOCK (1)H — P1
LTT TPØ H — R1
M117 C23
S1
M115 C25 (P1, R1, S1)
U1 LIP TAPE BRK REQ (1)H

CPS T BREAK (1)H — T2
CPTP TP2 H — U2
M113 A36
LIP TAPE PRESET L — V2
M115 C25 (D2, E2, F2)
H2 LIP TAPE BRK REQ (Ø)H

LWN CM H — D1
LCS BLOCK (1)H — E1
M113 C16
F1 LIP (CM*BLOCK) L — D2
LCS (MTB*BM*SEARCH) L — E2
M113 C16
F2 — LTS TTS Ø1 (1)H — J1 — LCX NO PAUSE (Ø)H — K1
M117 C23 (F1, H1)
L1 LIP CHK SUM TO AC L — A1
M111 D21
B1 — LTT TP1 H — M1
M113 C16
N1 LIP CHK SUM LD AC L

LTM TAPE PRESET L — A1
IOC IO PRESET L — B1
M113 C16
C1 LIP TAPE PRESET H — K2
M617 B28 (L2, M2, N2)
P2 LIP TAPE PRESET L

LCS WRITE CYCLE (Ø)L — H1
LIN TINR Ø9 (Ø)L — J1
M113 C16
K1 — F1
M119 C22 (H1, J1, K1, K2, L2, M2, N2)
P2 — LIP CHK OK L
LGP GP EQ GPC (1)H — K2
LIN TAC EQ 7777 H — L2
LCS CHK WRD (1)H — M2
LTT TP4 H — N2

LCX NO PAUSE (Ø)H — H2
CST DO (1)H — J2
M112 D16
K2 — A1
LIP PROGRESS (1)L — B1
M112 D16
C1 LIP TAPE PAUSE H

LCS BLOCK (1)L — D1
LIN TINR Ø9 (Ø)L — E1
M112 D16
F1 LIP TAPE CUT H

LIP MTP SETUP 2 L — F2
LIP END INST L — E2
M216 D19 (D 1, C Ø)
H2 LIP IN PROGRESS (1)H
J2 LIP IN PROGRESS (Ø)H
A1 LIP TAPE PRESET L

INS MTP H — T2
CPTP TP4 H — U2
CPS EXECUTE B (1)H — V2
M115 A32
V1 LIP MTP SETUP 2 L — D2
M617 B28 (E2, F2, H2)
+3V B28U1 H
J2 LIP MTP SETUP 2 H

LIN TINR 10 (1)H — N2
LCS (CM*CHK WRD) H — P2
LTT TP1 H — R2
M115 C25
S2 — J2 / K2 / L2 — M2 — D2
M115 C25
LCS (MTB*BM*SEARCH) L

LIN MTB H — M1
LWN BM H — N1
-LTD ACIP H — P1
R1
M617 B28
S1 — T2 / U2 / V2
LIP CHK OK L
LIP END INST L
M115 C27
V1 LIP CLR PROGRESS H

LIP MTP SETUP L — K1
LIP PROGRESS (1)H — L1
M216 D19 (D 1, J1, H1, C Ø)
M1 LIP PROGRESS (Ø)H
A1 — LIP TAPE PRESET L

LTMR IOT 6154 H — K2
-LTM EN AC H — L2
M121 B32
P2 LIP TAPE BUS TO AC L
CPT TS5 B (1)H — M2
N2

LRE MSC TAC TO AC L — N2
LRE EN EX OP BUF L — P2
R2
M115 B27
S2 LIP MSC TAC TO AC H

LTT TP2 H — E1 / E2
M304 C19
J1 — K1
K2

+3V D29V1 H — K2
T2
LIP TAPE DONE M216 C31 (D 1, C Ø)
V1 LIP TAPE DONE (1)H — U2
LIP PROGRESS (Ø)H — S2
V2
LIP TAPE PRESET L — A1
P1 — R1 / S1
M115 C29
U1 LIP TAPE SKIP L
PRC AC05 (1)H
LTMR IOT 6151 H

LIP MTP SETUP L — L1
LIP TAPE PRESET L — M1
M113 B16
N1 — K2 / L2
M121 E22
P2
LTMR IOT 6151 H — M2
PRC AC04 (1)H — N2

LCX TAPE IN1 EN (1)H — L2
LIP TAPE DONE (1)H — M2
M113 C16
N2 LIP TAPE INTERRUPT L

REVISIONS			REVISIONS		
CHK	CHANGE NO.	REV.	CHK	CHANGE NO.	REV.
CD	EM12-00002	A		EM12-00032	E
	J FASSHAUER 4-15-69				
	L GALE 4-24-69				
	EM12-00003	B			
	ADS				
	L GALE				
NR	EM12-00007	C			
	B KORTELING 8-25-69				
	L GALE 8-26-69				
	EM12-00017	D			

DRN D SHEPARD	DATE 3-5-69	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
CHKD J BISONETE	DATE 3-5-69	TITLE INTERPROCESSOR SIGNALS
ENG L GALE	DATE 3-5-69	
PROJ. ENG. L GALE	DATE 3-5-69	
PROD D CALL	DATE 3-5-69	
FIRST USED ON TC12		SIZE D / CODE BS / NUMBER TC12-Ø-LIP / REV. E
SCALE		
SHEET 1 OF 1		DIST.

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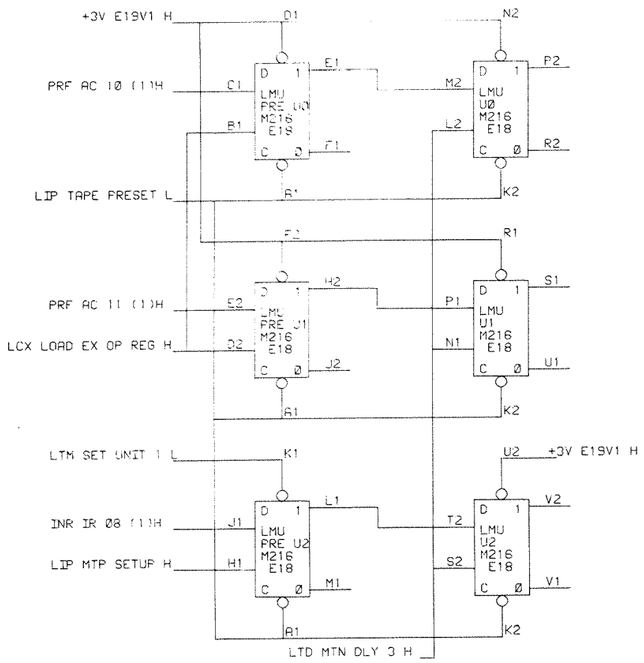

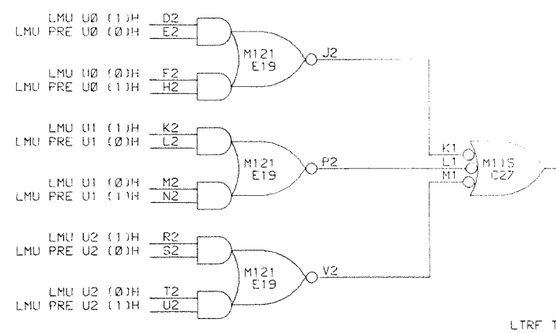

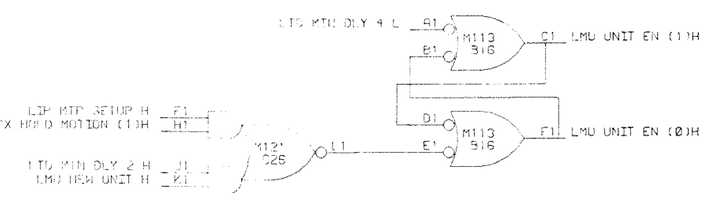

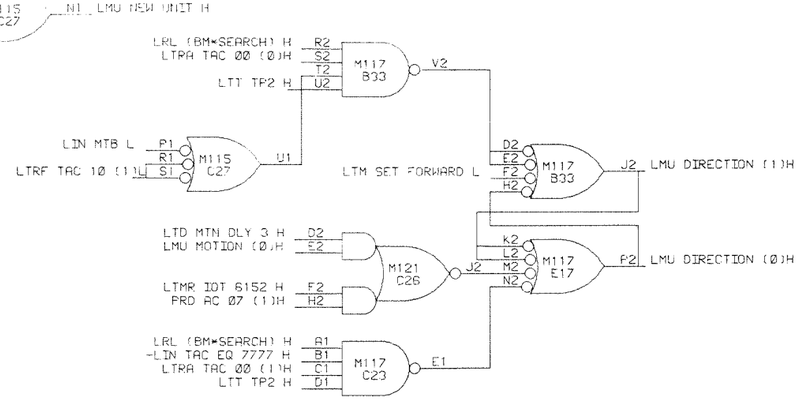

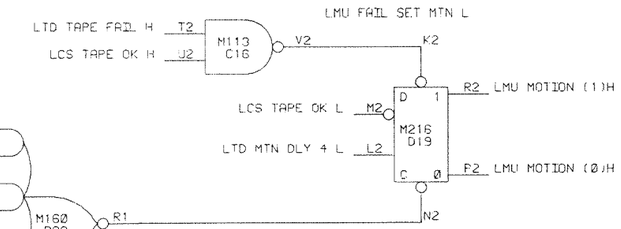

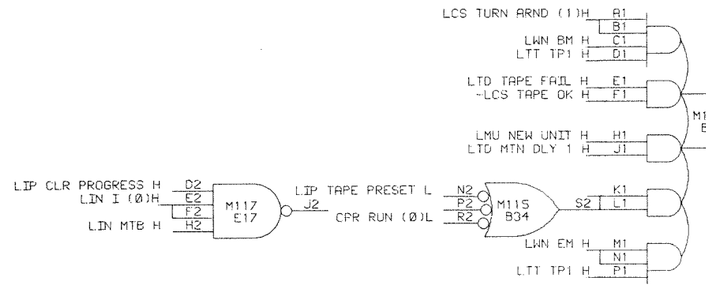

REVISIONS		
CHK	CHANGE NO.	REV.
NR	EM12-00003	A
	ADS	
	J SCANLAN 9/7/69	
	EM12-00017	B

DRN. D SHEPARD	DATE 5-10-69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. J BISONETE	DATE 5-10-69	
ENG. L GALE	DATE 5-10-69	TITLE: TAPE UNIT AND MOTION
PROJ. ENG. L GALE	DATE 5-10-69	
PROD. D CALL	DATE 5-10-69	
FIRST USED ON: TC12		SIZE D · CODE BS · NUMBER TC12-0-LMU · REV. B
SCALE		DIST.
SHEET 1 OF 1		

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CPT TS5 B (1)H N1
LIP IN PROGRESS (Ø)H N1
P1
R1
M117 E17
S1
F1
M111 D21
H1 LRE (TS5 * INPRG (Ø)) H

INS B MSC H R2
INR IR Ø7 B (1)H S2
CPT TS5 B (1)H T2
INS N EQ Ø3 H U2
LTM EN AC L
M117 A25
V2
D2 E2 F2 H2
M617 A24
J2 LRE EN AC H

INS MTP H T2
SLA EX TS4 H U2
M113 A26
V2
H2
M113 A26
K2 LRE EN MB 3-11 H
J2

INS MTP H D2
SLA EX TS4 H E2
LCX EX ADD FORMAT (1)H F2
M115 A27
H2
L1
M113 A26
N1 LRE EN MB Ø-2 H
M1

LCS WRITE SYNC (1)H K2
CPT TS4 (1)H L2
CPS TAPE BREAK (1)H M2
+3V C23U1 H N2
M117 C23
P2

D1
M111 C21
E1 LRE EN EX OP BUF H

INS B MSC H R2
INS N EQ Ø1 H S2
LRE (TS5 * INPRG (Ø)) H T2
INR IR Ø7 B (1)H U2
M117 C23
V2
LRE EN EX OP BUF L

INS B MSC H D2
INR IR Ø7 B (Ø)H E2
INS N EQ Ø3 H F2
H2
M117 A25
J2
LRE MSC TAC TO AC L

LIP CHK SUM TO AC L T2
LRL (BM*SEARCH)L U2
M113 B26
V2
LTS TTS Ø1 (1)H D2
E2
M121 B25
J2
LTM TEST SUM L A1
B1
C1
D1
M617 A24
E1 LRE EN TAC H

LCS WRITE (1)L D2
LWN FM L E2
M112 C24
F2
LTS TTS Ø4 (1)H F2
H2
LRE (WRITE * FM)H

LRL BLOCK EN TAC LD H J2
LCS BLOCK (1)H K2
LTS TTS Ø0 (1)H L2
M115 A27
M2

LTM TEST SUM L F1
LTM EN TB L H1
J1
K1
M617 A24
L1 LRE EN TB H

LRL (BM*SEARCH)H K2
LTS TTS Ø1 (1)H L2
CPT TS3 (1)H M2
LRE READ IN MEM H N2
M121 B25
P2

LIP TAPE BRK REQ (1)L

LCS WRITE SYNC (1)H N2
LWN (GM*DM) H P2
LTS TTS Ø2 (1)H R2
M115 A27
S2
LTM EN TMA L
K2
L2
M2
N2
M617 A23
P2 LRE EN TMA H

LRE READ IN MEM L

CPS TAPE BREAK (1)H T2
LIN TINR Ø9 (Ø)H U2
LCS BLOCK (1)H V2
M115 B27
V1
C1
M111 C21
D2
CPT TS2 (1)H L2
M2
M113 A26
N2
P1
R1
M113 A26
S1

LRE READ IN MEM H

D1
M111 D21
E1 LRE TAPE CARRY IN L

LTM EN TMA SETUP L

LCX EX ADD FORMAT (1)L A1
B1
M112 C24
C1
F1
M111 C21
H1
K2
L2
M2
N2
M617 B23
P2 LRE EN TMA SETUP H

LRL (BM*SEARCH) H P2
LTS TTS Ø4 (1)H R2
M113 B26
S2
D1
LCX EX ADD FORMAT (Ø)L E1
M112 C24
F1

LCS BLOCK (1)H K2
LRL BLOCK EN TAC LD H L2
LCS WRITE (Ø)H M2
LTS TTS Ø4 (1)H N2
M117 A25
P2
LTM EN RWB L F1
LTP8 EN RWB L H1
J1
K1
M617 A23
L1 LRE EN RWB H

LRL (BM*SEARCH) H P2
LTS TTS Ø0 (1)H R2
M113 A26
S2

LTM EN TBN L M1
LTM EN TBN L N1
LTM EN TBN L P1
R1
M617 A24
S1 LRE EN TBN H

LIN TINR 11 (Ø)H A1
LGP GP Ø0 (1)H B1
C1
M115 A27
D1
M113 A26
C1 LRE EN GP 1-2 H
A1
B1

LIN TINR 11 (1)H E1
LTRE TAC Ø9 (1)H F1
H1
M115 A27
J1
D1
E1
M113 A26
F1 LRE EN TDF H

LIN TINR 11 (Ø)H K1
LGP GP Ø0 (Ø)H L1
M1
M115 A27
N1
D2
E2
M113 A26
F2 LRE EN TAC 10-11 H

LIN TINR 11 (1)H P1
LTRE TAC Ø9 (Ø)H R1
S1
M115 A27
U1
H1
J1
M113 A26
K1 LRE EN TIF H

LCS SEARCH (1)H T2
-LWN BM H U2
LTS TTS Ø3 (1)H V2
M115 A27
V1
A1
M111 C21
B1 LRE EN GPCNT H

REVISIONS		
CHK	CHANGE NO.	REV.
	EM12-00002	A
	ADS	
	L GALE	
NR	EM12-00007	B
	B KOTELING 8-31-69	
	L GALE 8-26-69	
	EM12-00041	C
	Mocke 10/3/72	

DRN. D SHEPARD	DATE 3-9-69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. J BISONNETTE	DATE 3-9-69	
ENG. L GALE	DATE 3-9-69	TITLE: TAPE REG ENABLE CTRL
PROJ. ENG. L GALE	DATE 3-9-69	
PROD. D CALL	DATE 3-9-69	
FIRST USED ON TC12		SIZE D | CODE BS | NUMBER TC12-Ø-LRE | REV. C
SCALE		
SHEET 1 OF 1		DIST.

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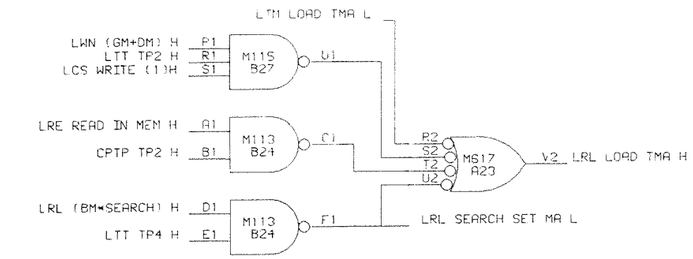

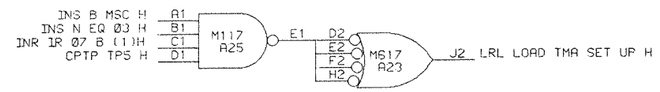

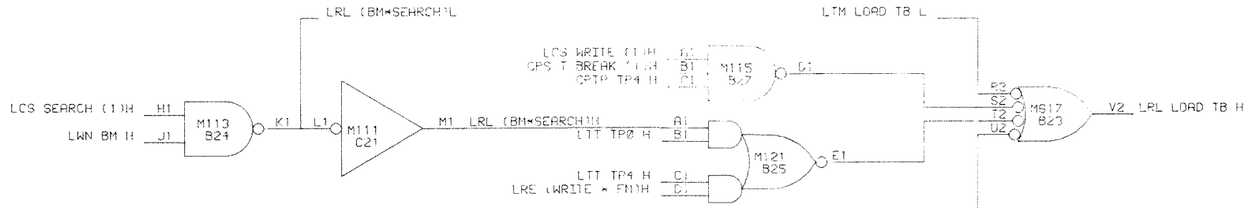

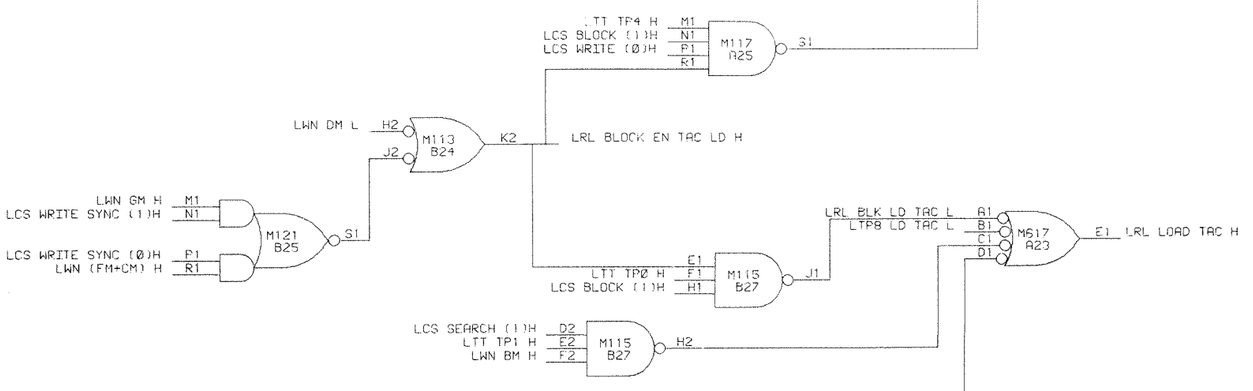

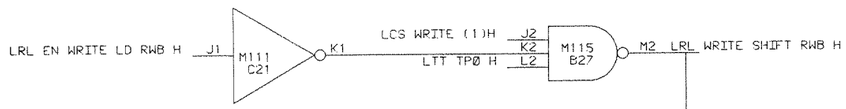

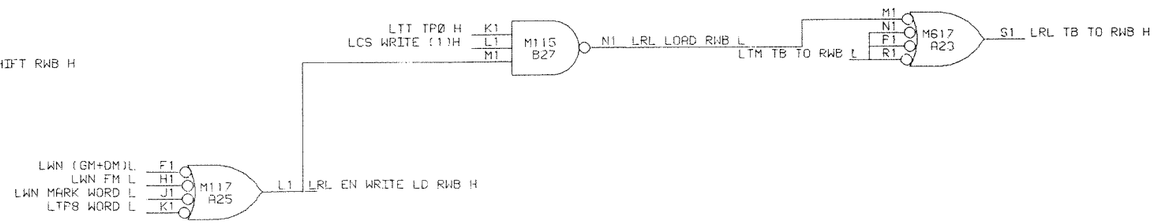

REVISIONS		
CHK	CHANGE NO.	REV.
	EM12-00007	A
	BRUCE KORTELING	
	L. GALE	

DRN.	DATE
CHK'D.	DATE
ENG.	DATE
PROJ. ENG.	DATE
PROD.	DATE
FIRST USED ON	TC12
SCALE	
SHEET 1 OF 1	

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
TAPE REG LOAD CONTROL

SIZE	CODE	NUMBER	REV.
D	BS	TC12-Ø-LRL	A

DIST.

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LMU MOTION (1)L — E2 — W512 F15 — D2 — LTC GO H — V2

LMU MOTION (Ø)L — H2 — W512 F15 — F2 — LTC STOP H — V2

LMU DIRECTION (Ø)L — K2 — W512 F15 — J2 — LTC FWD H — V2

LMU DIRECTION (1)L — M2 — W512 F15 — L2 — LTC REV H — V2

LIP TAPE PRESET H — P2 — W512 F15 — N2 — LTC ALL HALT L — V2

W023 E05

A2 —
B2 —
C2 — LTC GO H
D2 — LTC STOP H
E2 — LTC FWD H
F2 — LTC REV H
H2 — LTC ALL HALT L
J2 —
K2 —
L2 — LTC SINGLE UNIT H
M2 — LTC UNIT 1
N2 — LTC UNIT 2
P2 — LTC UNIT 3
R2 — LTC UNIT 4
S2 — LTC UNIT 5
T2 — LTC UNIT 6
U2 — LTC UNIT 7
V2 — LTC UNIT 8

LTC WRITE ON H

G853 F10: K2, D2, L2

D2 → W520 F11 (+) E2 (−) → H2
K2 → W520 F11 (+) E2 (−) → N2

H2, N2 → W603 F16 U2 → T2 LTC B UNIT SEL H — V2

S2 — W603 F16 — R2 LTC WRITE EN L — L1 — M111 D21 — M1 LTC WRITE EN H

+3V B22U2 H — V2

LMU U0 (Ø)H — A1
LMU U1 (Ø)H — B1
LMU U2 (Ø)H — C1
LMU UNIT EN (1)H — D1
M117 E16 — E1 LTC UNIT 8 L — E2 — W512 F14 — D2 — LTC UNIT 8 H — V2

LMU UNIT EN (1)H — F1
LMU U0 (Ø)H — H1
LMU U1 (Ø)H — J1
LMU U2 (1)H — K1
M117 E16 — L1 LTC UNIT 1 L — H2 — W512 F14 — F2 — LTC UNIT 1 H — V2

LMU UNIT EN (1)H — M1
LMU U0 (Ø)H — N1
LMU U1 (1)H — P1
LMU U2 (Ø)H — R1
M117 E16 — S1 LTC UNIT 2 L — K2 — W512 F14 — J2 — LTC UNIT 2 H — V2

LMU UNIT EN (1)H — D2
LMU U0 (Ø)H — E2
LMU U1 (1)H — F2
LMU U2 (1)H — H2
M117 E16 — J2 LTC UNIT 3 L — M2 — W512 F14 — L2 — LTC UNIT 3 H — V2

LMU UNIT EN (1)H — K2
LMU U0 (1)H — L2
LMU U1 (Ø)H — M2
LMU U2 (Ø)H — N2
M117 E16 — P2 LTC UNIT 4 L — P2 — W512 F14 — N2 — LTC UNIT 4 H — V2

LMU UNIT EN (1)H — R2
LMU U0 (1)H — S2
LMU U1 (Ø)H — T2
LMU U2 (1)H — U2
M117 E16 — V2 LTC UNIT 5 L — S2 — W512 F14 — R2 — LTC UNIT 5 H — V2

LMU UNIT EN (1)H — A1
LMU U0 (1)H — B1
LMU U1 (1)H — C1
LMU U2 (Ø)H — D1
M117 E17 — E1 LTC UNIT 6 L — U2 — W512 F14 — T2 — LTC UNIT 6 H — V2

LMU UNIT EN (1)H — F1
LMU U0 (1)H — H1
LMU U1 (1)H — J1
LMU U2 (1)H — K1
M117 E17 — L1 LTC UNIT 7 L — S2 — W512 F15 — R2 — LTC UNIT 7 H — V2

REVISIONS		
CHK	CHANGE NO.	REV.
NR	EM12-ØØØ4	B
	B VADITO	
	L GALE 8-18-69	
	EM12-ØØØ15	C

DRN.	R L SHEPARD	DATE 3-8-69
CHK'D.	L K BISONETTE	DATE 3-9-69
ENG.	~~R GALE~~	DATE ~~3-8-69~~
PROJ. ENG.	L GALE	DATE 3-9-69
PROD.	~~R GALE~~	DATE ~~3-9-69~~
FIRST USED ON	TC12	
SCALE		
SHEET 1 OF 1		

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: TRANSPORT CONTROL

SIZE	CODE	NUMBER	REV.
D	BS	TC12-Ø-LTC	C

DIST.

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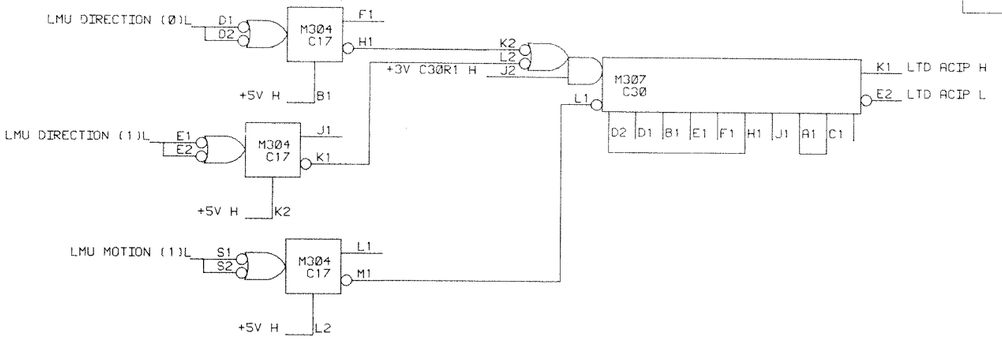
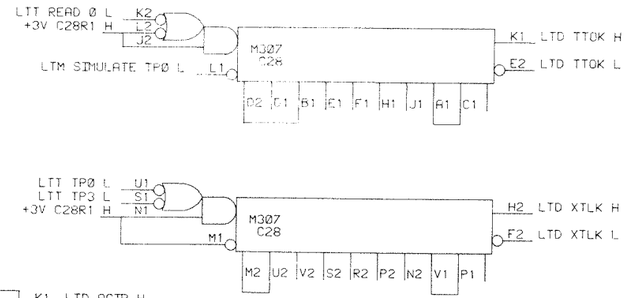
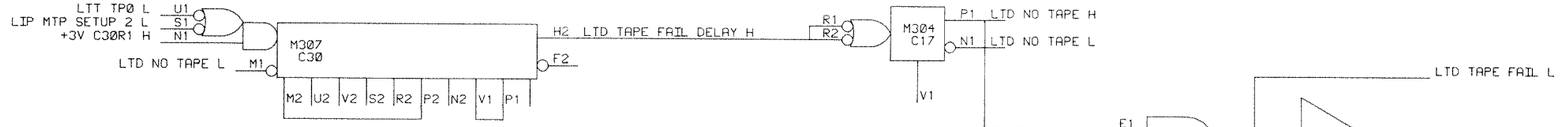
DELAY SETTINGS			
DELAY	TU55	TOLL.	SWITCH SET *
TTOK	48 USEC	± 4	5
ACIP	180 MSEC	± 20	1
XTLX	7 USEC	± 1	5
TAPE FAIL	300 MSEC	+ 50 - 0	1
MARK CLOCK	7.5 USEC	+ 0.3 - 0	5

* ON M307 REV.B AND GREATER-SEE B-CS-M307-0-1 FOR DETAILS.







REVISIONS			REVISIONS		
CHK	CHANGE NO.	REV.	CHK	CHANGE NO.	REV.
	EM12-00001	A	NR	EM12-00017	E
	J FASSHAUER 4/15/69			A WASHINGTON 11-3-69	
	L GALE 4/29/69			J SCANLAN 11-14-69	
	EM12-00002	B		EM12-00037	F
	A WASHINGTON			K KRYSIAK	
	J SCANLAN			J SCANLAN	
	EM12-00003	C	HC	EM12-00038	H
	A WASHINGTON				
	J SCANLAN			D Meade 3-17-70	
	EM12-00011	D			
	A WASHINGTON				
	J SCANLAN				

DRN. D SHEPARD	DATE 3-9-69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
CHK'D. J BISONETE	DATE 3-9-69		
ENG. L GALE	DATE 3-9-69	TITLE TAPE DELAYS	
PROJ. ENG. L GALE	DATE 3-9-69		
PROD. D CALL	DATE 3-9-69		
FIRST USED ON TC12		SIZE D	CODE BS
SCALE		NUMBER TC12-0-LTD	REV. H
SHEET 1 OF 1		DIST.	

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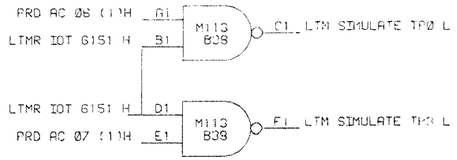

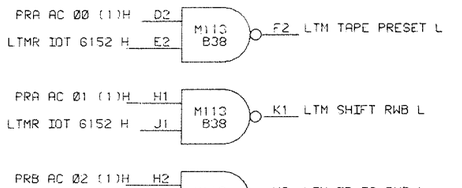

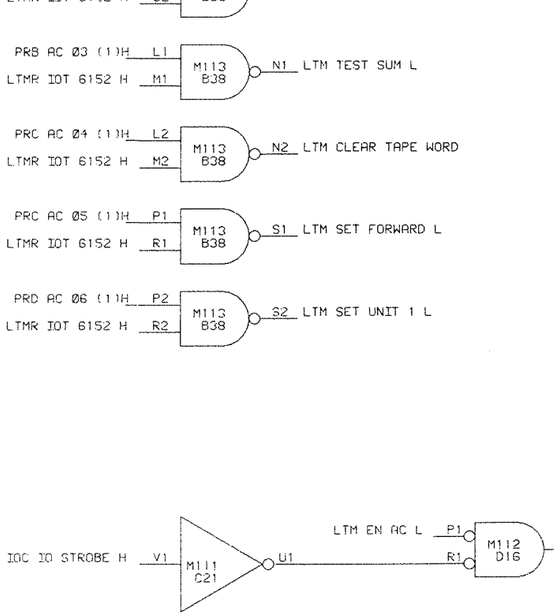

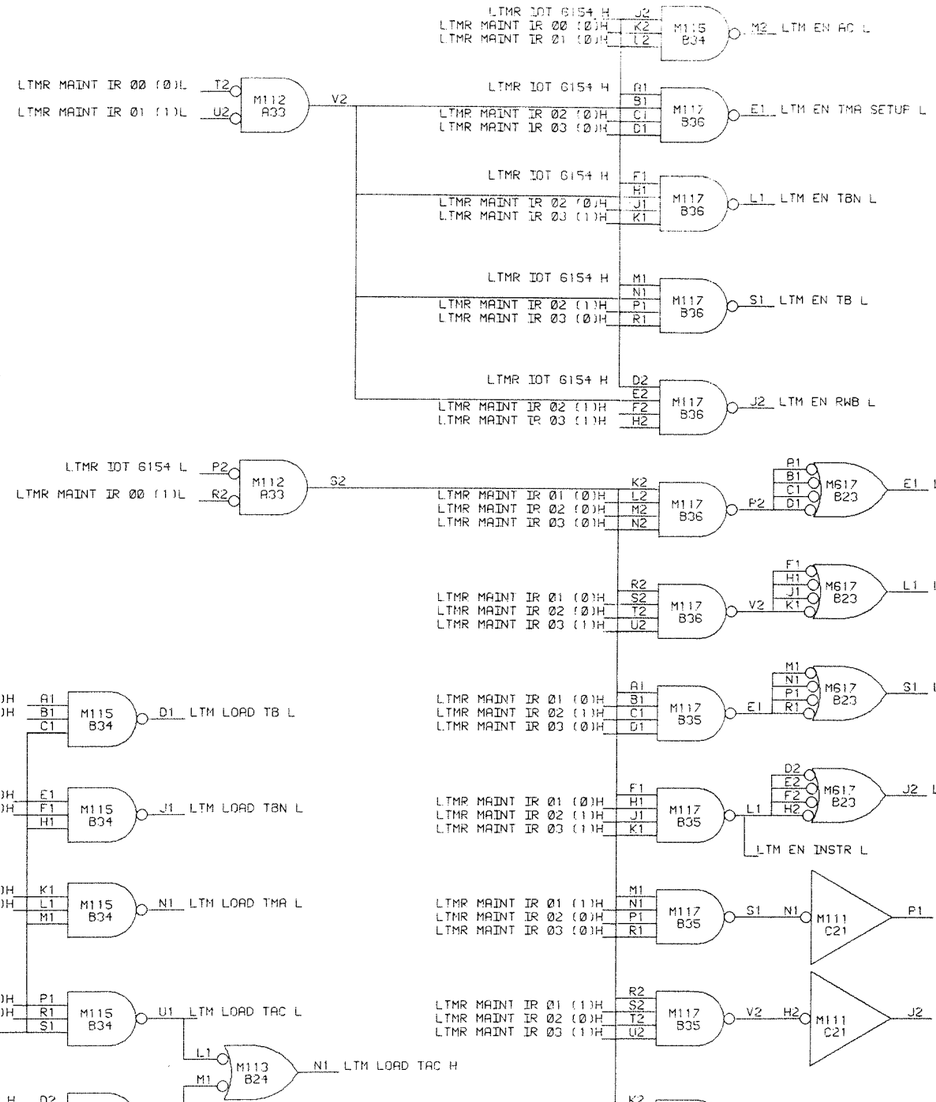

REVISIONS		
CHK	CHANGE NO.	REV.
	EM12-ØØØØ3	A

DRN. D.L.SHEPARD	DATE 3-10-69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. J.BISONETTE	DATE 3-10-69	
ENG. L.GALE	DATE 3-10-69	TITLE TAPE MAINT SIGNALS
PROJ. ENG. L.GALE	DATE 3-10-69	
PROD. D.CALI	DATE 3-10-69	
FIRST USED ON TC12		SIZE D / CODE 85 / NUMBER TC12-Ø-LTM / REV. A
SCALE		
SHEET 1 OF 1		DIST.

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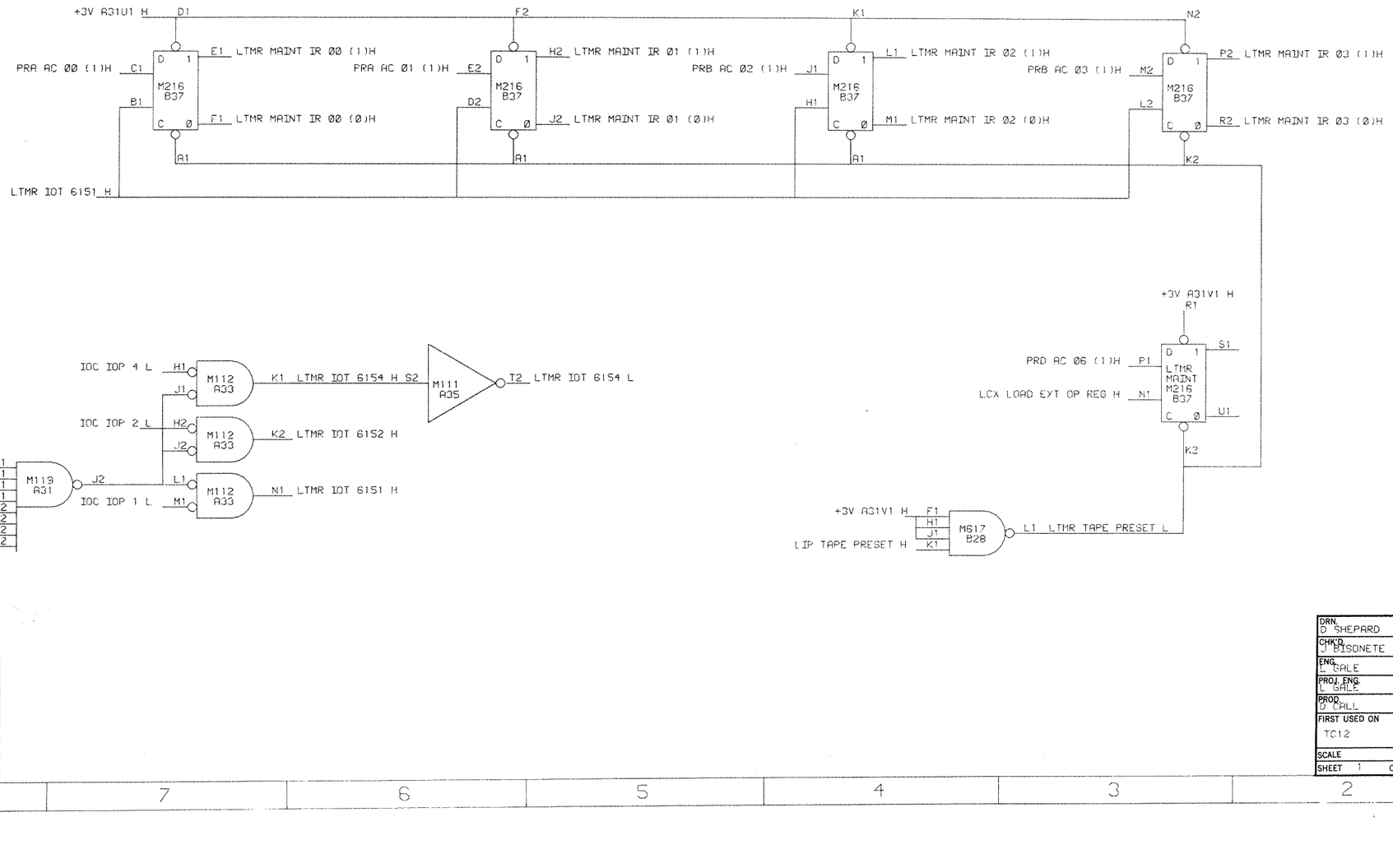
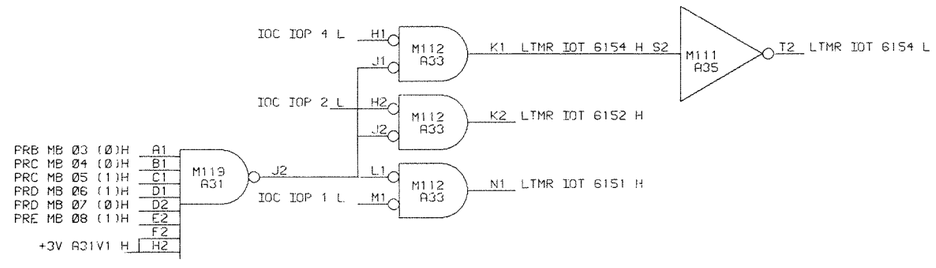
MSC 3 TAC TO AC
MSC I 3 AC TO TMA SETUP

IOT 6151	
AC BIT	FUNCTION
0	TO MAINT INST REG
1	TO MAINT INST REG
2	TO MAINT INST REG
3	TO MAINT INST REG
4	CLEAR TAPE DONE
5	SKIP ON TAPE DONE
6	GENERATE TT0
7	GENERATE TT3
8	SIMULATE MARK INPUT
9	SIMULATE DATA 1 INPUT
10	SIMULATE DATA 2 INPUT
11	SIMULATE DATA 3 INPUT

IOT 6152	
AC BIT	FUNCTION
0	TAPE PRESET
1	SHIFT RWB
2	TB TO RWB
3	TB + TAC TO TAC
4	0 TO TAPE WORD FF
5	SET 8 TAPE
6	SET UNIT 1
7	SET BKWRD
8	SET WRITE SYNC
9	SET 8 TAPE MOTN
10	SET 8 WRITE
11	

IOT 6154	
CONTENTS MAINT INST REG	ACTION
000 0	AC TO TB
000 1	AC TO TBN
001 0	AC TO TPC
001 1	AC TO TMA
010 0	TMA SETUP TO AC
010 1	TBN TO AC
011 0	TB TO AC
011 1	RWB TO AC
100 0	MARK WINDOW TO AC
100 1	STATES TO AC
101 0	UNITS + MTN TO AC
101 1	TINST TO AC
110 0	MISC STATUS 1 TO AC
110 1	MISC STATUS 2 TO AC
111 0	TMA TO AC
111 1	NOT USED





REVISIONS		
CHK	CHANGE NO.	REV.
	EM12-00017	A

DRN D SHEPARD	DATE 3-10-69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D J BISONETE	DATE 3-10-69	
ENG. L GALE	DATE 3-10-69	TITLE TAPE MAINT REG
PROJ. ENG. L GALE	DATE 3-10-69	
PROD. D CALL	DATE 3-10-69	
FIRST USED ON TC12		SIZE D / CODE BS / NUMBER TC12-0-LTMR / REV. A
SCALE		
SHEET 1 OF 1		DIST.

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TAPE HEADS

HEAD SELECTION RELAYS LOCATED IN TU55 TAPE TRANSPORT

W032 TAPE TRANSPORT A02, B02 — AF2 AJ2 AH2 AK2 | AN2 AR2 AP2 AS2 | BD2 AU2 AV2 AT2 | BJ2 BF2 BH2 BE2 | BP2 BM2 BV2 BT2

W032 E06, F06 — EF2 EJ2 EH2 EK2 | EN2 ER2 EP2 ES2 | FD2 EU2 EV2 ET2 | FJ2 FF2 FH2 FE2 | FP2 FM2 FN2 FT2

LTR HEAD T H | LTR HEAD M H | LTR HEAD D1 H | LTR HEAD D2 H

G882 F05 — D2 F2 E2 | U2 V2 | T WRITE J2 K2 | R2 N2 P2

G882 F04 — D2 F2 E2 | U2 V2 | M WRITE J2 K2 | R2 N2 P2

G882 F07 — D2 F2 E2 | U2 V2 | D1 WRITE J2 K2 | R2 N2 P2

G882 F08 — D2 F2 E2 | U2 V2 | D2 WRITE J2 K2 | R2 N2 P2

G882 F09 — D2 F2 E2 | U2 V2 | D3 WRITE J2 K2 | R2 N2 P2

LTR T READ-3 L — E2 — W603 F16 — D2 — LTR T READ H

LTR TIME WRITE-3 L — D2 — R107 F12 — E2 — LTR TIME WRITE-3 H

LTR MARK CHAN L — H2 — W603 F16 — F2 — LTR M READ H

LTR MARK WRITE-3 L — F2 — R107 F12 — H2 — LTR MARK WRITE-3 H

LTR D1 CHAN L — K2 — W603 F16 — J2 — LTR D1 READ H

LTR DATA 1 WRITE-3 L — J2 — R107 F12 — K2 — LTR DATA 1 WRITE-3 H

LTR D2 CHAN L — M2 — W603 F16 — L2 — LTR D2 READ H

LTR DATA 2 WRITE-3 L — L2 — R107 F12 — M2 — LTR DATA 2 WRITE-3 H

LTR D3 CHAN L — P2 — W603 F16 — N2 — LTR D3 READ H

LTR DATA 3 WRITE-3 L — N2 — R107 F12 — P2

LTR MARK ON L — D2 — W512 F13 — E2 — LCS MARK (1) H

H2 — F2 — W512 F13 — H2 — LTS TIME WRITE L

LTR WRITE ON L — H2 — N37 POWER PROTECT G916 — F2

J2 — W512 F13 — K2 — LWN MARK WRITE L

L2 — W512 F13 — M2 — LCS WRITE (1) H

N2 — W512 F13 — P2 — LTRA RWB 00 OUT H

R2 — W512 F13 — S2 — LTRC RWB 04 OUT H

T2 — W512 F13 — U2 — LTRE RWB 08 OUT H

REVISIONS	REV	CHANGE NO.	CHK	
	A	00002		T. QUILLIN 6/18/69 L. GALE
	B	EM12-00003		T. QUILLIN 6/24/69 L GALE 8/8/69

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

UNLESS OTHERWISE SPECIFIED

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINAL SURFACE QUALITY
REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL

FINISH

DRN. Joe Arpea DATE 21 AUG 68
CHK'D Jean Lam DATE 2/27/69
ENG. DATE
PROJ. ENG. DATE
PROG. Al Ball DATE 2/24/69

FIRST USED ON TC12

SCALE

SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE
LTR
TAPE READER-WRITERS

SIZE	CODE	NUMBER	REV.
D	BS	TC12-Ø-LTR	B

DIST.

DEC FORM NO. DRD 102A

SIZE D CODE BS NUMBER TC12-Ø-LTR REV B

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-LTS PHASE H — BS2

BV1 LTRA RWB ØØ OUT H

BN2, BM2 — PRA AC ØØ(1)H, LRE EN AC H

BP2, BU1 — LWN WIND SHADE (1)H, LTM EN MARK WIND H

BK2, BL2 — LIN TAC EQ 7777 H, LTM EN STATES H

BJ2, BS1 — -LTC UNIT 8 H, LTM EN UNITS H

BR1, BF1 — LCXF TF ØØ(1)H, LRE EN EX OP BUF H

BM1, BL1 — LTRA TB ØØ(1)H, LRE EN TB H

BK1

AS1, AR2 — PRA MB ØØ(1)H, LRE EN MB Ø-2 H

AM2, AE2 — LTS PHASE H, LTM EN STATUS 1 H

AD2 — LTRA RWB ØØ(1)H, LRE EN RWB H

AM1, AL1 — LTRA TBN ØØ(1)H, LRE EN TBN H

AS2 — LTRA TMA ØØ(1)H, LRE EN TMA H

AP1 — LTR TMA SET UP ØØ(1)H, LRE EN TMA SET UP H

AP2 — LTRA MSC IN ØØ H

AL2 — LTRA TAC ØØ(1)H, LRE EN TAC H

BN1, AN2 → AV2 — LTRA CARRY OUT ØØ L

BV2 — LTRA TAPE BUS ØØ H

AR1 — LTRA TMA SETUP ØØ

AT2 — LTRA TMA ØØ

AU1 — LTRA TBN ØØ

AN1 — LTRA TAC ØØ — AJ2

BP1 — LTRA TB ØØ

LTRA RWB ØØ

BH2, BU1 — PRA AC Ø1(1)H, LRE EN AC H

BJ1, BL2 — LWN WIND ØØ(1)H, LTM EN MARK WIND H

BC1, BS1 — LCS IDLE (1)H, LTM EN STATES H

BH1, BF1 — -LTC UNIT 1 H, LTM EN UNITS H

BE1, BL1 — LCXF TF Ø1(1)H, LRE EN EX OP BUF H

BK1 — LTRA TB Ø1(1)H, LRE EN TB H

AB2, AC1 — PRA MB Ø1(1)H, LRE EN MB Ø-2 H

AE1, AE2 — LIP IN PROGRESS (1)H, LTM EN STATUS 1 H

AD2 — LTRA RWB Ø1(1)H, LRE EN RWB H

AF2, AL1 — LTRA TBN Ø1(1)H, LRE EN TBN H

AS2 — LTRA TMA Ø1(1)H, LRE EN TMA H

AP1 — LTR TMA SET UP Ø1(1)H, LRE EN TMA SET UP H

AF1 — LTRB CARRY OUT Ø2 L — BA1

AL2 — LTRA TAC Ø1(1)H, LRE EN TAC H

BB1, BB2 → BR2 — LTRA TAPE BUS Ø1 H

AH1 — LTRA TMA SETUP Ø1 — LRL LOAD TMA H — AU2

AD1 — LTRA TMA Ø1 — LRL LOAD TBN H — AJ1

AK2 — LTRA TBN Ø1 — LRL LOAD TAC H — AA1

AH2 — LTRA TAC Ø1 — LRL LOAD TB H — BT2

BD1 — LTRA TB Ø1 — LRL TB TO RWB H — BF2

LRL SHIFT RWB H — BE2

BD2 — LTRA RWB Ø1

LTRB RWB Ø2 OUT H

LRE EN TDF H, R2 / LCX TDF Ø4(1)H, S1

LRE EN TIF H, P2 / LCX TIF Ø4(1)H, R1

LTM EN INSTR H, N2 / LIN RCG H, P1 — R,DG →?

LTM EN STATUS 2 H, M2 / LTP8 WRITE SEL H, N1

M169 A16 → L1 → M1 → AF1 — +3V B16 U1 H

LRL LOAD TMA SET UP H — AK1

LRE EN TDF H, R2 / LCX TDF Ø3(1)H, V1

LRE EN TIF H, P2 / LCX TIF Ø3(1)H, U1

LTM EN INSTR H, N2 / LIN RDC H, T2

LTM EN STATUS 2 H, M2 / LTP8 TAPE SEL H, S2

M169 A16 → U2 → V2 — LTRA MSC IN ØØ H — +3V B16 U1 H

M222
A17
B17

REVISIONS	REV	CHK	CHANGE NO	
	A	KAB	00002	L GALE 6/18/68
	B	KAB	EM12-00004	T Quellin 8-18-69
	C	KAB	EM12-00009	L GALE 8-18-69
	D	KAB	EM12-00015	L GALE 8/20/69
	E	KAB	EM12-00032	T Quellin 3-9-70
				GALE 3-16-70

DEC FORM NO. DRD 102A

QTY.	DESCRIPTION	PART NO.	ITEM NO.
	PARTS LIST		

UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINAL SURFACE QUALITY / REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL

FINISH

DRN.	DATE	12-8-68
CHK'D	DATE	2/27/69
ENG.	DATE	2-28-69
PROJ. ENG.	DATE	2-28-69
PROD.	DATE	3/2/69

FIRST USED ON: TC12

SCALE

SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: LTRA BITS Ø & 1

SIZE	CODE	NUMBER	REV.
D	85	TC12-Ø-LTRA	E

DIST.

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+3V C26U1 H — BS2 — BV1 — LTRB RWB Ø2 OUT H

LTRB CARRY OUT Ø2 L — AV2

BN2, BM2 — PRB AC Ø2(1) H LRE EN AC H — BP2, BU1
BK2, BL2 — LWN WIND Ø1(1) H LTM EN MARK WIND H
BJ2, BS1 — LCS SEARCH (1) H LTM EN STATES H
BR1, BF1 — -LTC UNIT 2 H LTM EN UNITS H
BM1, BL1 — LCXF TF Ø2(1) H LRE EN EX OP BUF H
BK1 — LTRB TB Ø2(1) H LRE EN TB H

BN1, AN2

AS1, AR2 — PRB MB Ø2(1) H LRE EN MB Ø-2 H
AM2, AE2 — LTS LC ØØ (1) H LTM EN STATUS 1 H
AD2 — LTRA RWB Ø2(1) H LRE EN RWB H
AM1, AL1 — LTRA TBN Ø2(1) H LRE EN TBN H
AS2 — LTRA TMA Ø2(1) H LRE EN TMA H
AP1 — LTR TMA SET UP Ø2(1) H LRE EN TMA SET UP H
AP2 — LTRB MSC IN Ø2 H
AL2 — LTRA TAC Ø2(1) H LRE EN TAC H

BV2 — LTRB TAPE BUS Ø2 H

AR1 — LTRB TMA SETUP Ø2 (D 1, C Ø)
AT2 — LTRB TMA Ø2 (D 1, C Ø)
AU1 — LTRB TBN Ø2 (D 1, C Ø)
AN1 — LTRB TAC Ø2 (D 1, C Ø, AJ2)
BP1 — LTRB TB Ø2 (D 1, C Ø)
LTRB RWB Ø2 (D 1, C Ø)

BH2, BU1 — PRB AC Ø3(1) H LRE EN AC H
BJ1, BL2 — LWN WIND Ø2(1) H LTM EN MARK WIND H
BC1, BS1 — LCS BLOCK (1) H LTM EN STATES H
BH1, BF1 — -LTC UNIT 3 H LTM EN UNITS H
BE1, BL1 — LRE EN EX OP BUS H
BK1 — LTRA TB Ø3(1) H LRE EN TB H
C1, D1 — LRE EN GP 1-2 H LGP GP Ø2(1) H
D2, E1 — LRE EN TAC 1Ø-11 H LTRF TAC 11(1) H
E2, F1 — LTM EN INSTR H LIN MTB H
F2, H1 — LTM EN STATUS 2 H
M169 A1G

BB1, BB2

AB2, AC1 — PRB MB Ø3(1) H LRE EN MB 3-11 H
AE1, AE2 — LTS LC Ø1(1) H LTM EN STATUS 1 H
AO2 — LTRA RWB Ø3(1) H LRE EN RWB H
AF2, AL1 — LTRA TBN Ø3(1) H LRE EN TBN H
AS2 — LTRA TMA Ø3(1) H LRE EN TMA H
AP1 — LTR TMA SET UP Ø3(1) H LRE EN TMA SET UP H
B1, A1 — +3V B1GU1 H — AF1
AL2 — LTRA TAC Ø3(1) H LRE EN TAC H

BA1 — LTRC CARRY OUT Ø4L
AK1 — LRL LOAD TMA SET UP H

BR2 — LTRB TAPE BUS Ø3 H

AH1 — LTRB TMA SETUP Ø3 (D 1, C Ø) — LRL LOAD TMA H AU2
AD1 — LTRB TMA Ø3 (D 1, C Ø) — LRL LOAD TBN H AJ1
AK2 — LTRB TBN Ø3 (D 1, C Ø) — LRL LOAD TAC H AA1
AH2 — LTRB TAC Ø3 (D 1, C Ø, AB1) — LRL LOAD TB H BT2
BD1 — LTRB TB Ø3 (D 1, C Ø) — LRL TB TO RWB H BF2
AV1 — LTRB RWB Ø3 (D 1, C Ø) — LRL SHIFT RWB H BE2
BD2

LRE EN GP 1-2 H C1, H2 — LGP GP Ø1 (1) H
LRE EN TAC 1Ø-11 H D2, J2 — LTRF TAC 1Ø(1) H
LTRF EN INSTR H E2, K2 — LIN RDE H
LTM EN STATUS 2 H F2, L2
M169 A1G — J1 — +3V B1GU1 H — K1 — LTRB MSC IN Ø2 H

LTMR MAINT (1) H A1, B1 — PRE AC Ø9(1) H
LTMR MAINT (Ø) H C1, D1 — LTR DI READ H
M121 C26 — E1

M222
A18
B18

REVISIONS			
CHK	CHANGE NO.	REV.	
Fred	00002	A	T. Quilling L. GALE 6/18/68
Fred	EM12-00003	B	T. Quilling 6-24-69 L. GALE 8/6/69
Fred	EM12-00009	C	To Manufg 8-20-69 L. GALE 8/20/69
Fred	EM12-00015	D	To Manufg 10/7/69 L. GALE 10/7/69

QTY.	DESCRIPTION	PART NO.	ITEM NO.
	PARTS LIST		

UNLESS OTHERWISE SPECIFIED
UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINAL SURFACE QUALITY / REMOVE BURRS AND BREAK SHARP CORNERS
MATERIAL
FINISH

DRN. — DATE 12-8-68
CHK — DATE 2/21/69
ENG. — DATE 2-28-69
PROJ. ENG. — DATE 2-28-69
PROD. — DATE 7/24/69
FIRST USED ON TC12
SCALE
SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: LTRB BITS 2&3

SIZE D | CODE 85 | NUMBER TC12-Ø-LTRB | REV D
DIST.

DEC FORM NO DRD 102A

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LRE EN EX OP BUF H — BN2
LCX MARK (1) H — BM2

PRC AC Ø4 (1) H — BP2
LRE EN AC H — BU1

LWN WIND Ø3 (1) H — BK2
LTM EN MARK WIND H — BL2

LCS CHECK WORD (1) H — BJ2
LTM EN STATES H — BS1

-LTC UNIT 4 H — BR1
LTM EN UNITS H — BF1

LIN WRC H — BM1
LTM EN INSTR H — BL1

LTRC TB Ø4 (1) H — BK1
LRE EN TB H

PRC MB Ø4 (1) H — AS1
LRE EN MB 3-11 H — AR2

LWN MARK WRITE H — AM2
LTM EN STATUS 1 H — AE2

LTRC RWB Ø4 (1) H — AD2
LRE EN RWB H

LTRC TBN Ø4 (1) H — AM1
LRE EN TBN H — AL1

LTRC TMA Ø4 (1) H — AS2
LRE EN TMA H

LTR TMA SET UP Ø4 (1) H — AP1
LRE EN TMA SET UP H

AP2

LTRC TAC Ø4 (1) H — AL2
LRE EN TAC H

BN1
AN2
AV2 — LTRC CARRY OUT Ø4 L

BV2 — LTRC TAPE BUS Ø4 H

-LTS PHASE H — BS2
BV1 — LTRC RWB Ø4 OUT H

D 1 LTRC TMA SETUP Ø4 C Ø — AR1
D 1 LTRC TMA Ø4 C Ø — AT2
D 1 LTRC TBN Ø4 C Ø — AU1
D 1 LTRC TAC Ø4 C Ø — AN1 — AJ2
D 1 LTRC TB Ø4 C Ø — BP1
D 1 LTRC RWB Ø4 C Ø

PRC AC Ø5 (1) H — BH2
LRE EN AC H — BU1

LWN EM H — BJ1
LTM EN MARK WIND H — BL2

LCS TURN AROND (1) H — BC1
LTM EN STATES H — BS1

-LTC UNIT 5 H — BH1
LTM EN UNITS H — BF1

LIN WRG H — BE1
LTM EN INSTR H — BL1

LTRC TB Ø5 (1) H — BK1
LRE EN TB H

PRC MB Ø5 (1) H — AB2
LRE EN MB 3-11 H — AC1

LTRA RWB ØØ OUT H — AE1
LTM EN STATUS 1 H — AE2

LTRC RWB Ø5 (1) H — AD2
LRE EN RWB H

LTRC TBN Ø5 (1) H — AF2
LRE EN TBN H — AL1

LTRC TMA Ø5 (1) H — AS2
LRE EN TMA H

LTR TMA SET UP Ø5 (1) H — AP1
LRE EN TMA SET UP H

LRE EN EX OP BUF L — P2
LCX TAPE INT EN (1) L — R2
M112 C24 — S2 — AF1

LTRC TAC Ø5 (1) H — AL2
LRE EN TAC H

BB1
BB2
BA1 — LTRD CARRY OUT Ø6 L

AK1 — LRL LOAD TMA SET UP H

BR2 — LTRC TAPE BUS Ø5 H

D 1 LTRC TMA SETUP Ø5 C Ø — AH1
D 1 LTRC TMA Ø5 C Ø — AD1
D 1 LTRC TBN Ø5 C Ø — AK2
D 1 LTRC TAC Ø5 C Ø — AH2 — AB1
D 1 LTRC TB Ø5 C Ø — BD1
D 1 LTRC RWB Ø5 C Ø — BD2

AU2 — LRL LOAD TMA H
AJ1 — LRL LOAD TBN H
AA1 — LRL LOAD TAC H
BT2 — LRL LOAD TB H
BF2 — LRL TB TO RWB H
BE2 — LRL SHIFT RWB H

LTRD RWB Ø6 OUT H

M222
A19
B19

REVISIONS	REV	CHK
CHANGE NO 00002 T Guillin L Gale 6/18/68	A	DB
FV EM12-00030 T Guillin 2.2.70 Gale	B	
EM12 00037 D Moore 1/16/70 Gale 3/31/70	C	

UNLESS OTHERWISE SPECIFIED	DRN.	DATE 12-8-68
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30' FINAL SURFACE QUALITY REMOVE BURRS AND BREAK SHARP CORNERS	CHK'D	DATE 2/17/69
	ENG.	DATE 2-28-69
	PROJ. ENGR.	DATE 2-28-69
MATERIAL	PROD.	DATE 3/3/69
FINISH	FIRST USED ON TC12	SCALE
	SHEET 1 OF 1	

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: LTRC BITS 4&5

SIZE	CODE	NUMBER	REV
D	BS	TC12-Ø-LTRC	C

DIST.

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

DEC FORM NO DRD 102A

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LTM MAINT (1) H — BN2 / BM2
LRE EN EX OP BUF H

PRD AC Ø6(1) H — BP2 / BU1
LRE EN AC H

LWN CM H — BK2 / BL2
LTM EN MARK WIND H

LCS WRITE (1) H — BJ2 / BS1
LTM EN STATES H

-LTC UNIT 6 H — BR1 / BF1
LTM EN UNITS H

LIN WRI H — BM1 / BL1
LTM EN INSTR H

LTRD TB Ø6(1) H — BK1
LRE EN TB H

PRD MB Ø6(1) H — AS1 / AR2
LRE EN MB 3-11 H

LTRC RWB Ø4 OUT H — AM2 / AE2
LTM EN STATUS 1 H

LTRD RWB Ø6(1) H — AD2
LRE EN RWB H

LTRD TBN Ø6(1) H — AM1 / AL1
LRE EN TBN H

LTRD TMA Ø6(1) H — AS2
LRE EN TMA H

LTR TMA SET UP Ø6(1) H — AP1
LRE EN TMA SET UP H

AP2

LTRD TAC Ø6(1) H — AL2
LRE EN TAC H

BN1

AN2

LTRD CARRY OUT Ø6 L — AV2

+3V C26U1 H — BS2

BV1 — LTRD RWB Ø6 OUT H

BV2 — LTRD TAPE BUS Ø6 H

D 1 LTRD TMA SETUP Ø6 C Ø — AR1

D 1 LTRD TMA Ø6 C Ø — AT2

D 1 LTRD TBN Ø6 C Ø — AU1

D 1 LTRD TAC Ø6 C Ø — AN1 / AJ2

D 1 LTRD TB Ø6 C Ø — BP1

D 1 LTRD RWB Ø6 C Ø

PRD AC Ø7(1) H — BH2 / BU1
LRE EN AC H

LWN GM H — BJ1 / BL2
LTM EN MARK WIND H

LCS WRITE CYCLE H — BC1 / BS1
LTM EN STATES H

-LTC UNIT 7 H — BH1 / BF1
LTM EN UNITS H

LIN CHK H — BE1 / BL1
LTM EN INSTR H

LTRD TB Ø7(1) H — BK1
LRE EN TB H

PRD MB Ø7(1) H — AB2 / AC1
LRE EN MB 3-11 H

LTRE RWB Ø8 OUT H — AE1 / AE2
LTM EN STATUS 1 H

LTRD RWB Ø7(1) H — AD2
LRE EN RWB H

LTRD TBN Ø7(1) H — AF2 / AL1
LRE EN TBN H

LTRD TMA Ø7(1) H — AS
LRE EN TMA H

LTR TMA SET UP Ø7(1) H — AP1
LRE EN TMA SET UP H

LRE EN EX OP BUF L — T2
LCX EX ADD FORMAT (1) L — U2
M112 C24 — V2 — AF1

LTRD TAC Ø7(1) H — AL2
LRE EN TAC H

BB1

BB2

BR2 — LTRD TAPE BUS Ø7 H

D 1 LTRD TMA SETUP Ø7 C Ø — AH1

D 1 LTRD TMA Ø7 C Ø — AD1

D 1 LTRD TBN Ø7 C Ø — AK2

D 1 LTRD TAC Ø7 C Ø — AH2 / AB1

D 1 LTRD TB Ø7 C Ø — BD1

D 1 LTRD RWB Ø7 C Ø — BD2

LTRE CARRY OUT Ø8 L — BA1

LRL LOAD TMA SET UP H — AK1

LRL LOAD TMA H — AU2

LRL LOAD TBN H — AJ1

LRL LOAD TAC H — AA1

LRL LOAD TB H — BT2

LRL TB TO RWB H — BF2

LRL SHIFT RWB H — BE2

LTMR MAINT (1) H — K2 / L2
PRF AC 1Ø(1) H

LTMR MAINT (Ø) H — M2 / N2
LTR D2 READ H

M121 C26 — P2

M222
A2Ø
B2Ø

REVISIONS	REV	CHK
CHANGE NO. 00002	A	
T. Quill 1. Gale 4/18/68		
EM12-00030	B	
T. Quill 2-3-70		
GALE 3-4-70		

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

UNLESS OTHERWISE SPECIFIED
UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINAL SURFACE QUALITY
REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL

FINISH

DRN.		DATE 12-8-68
CHK'D		DATE 2-12-69
ENG.		DATE 2-24-69
PROJ. ENG.		DATE 2-24-69
PROD.		DATE 2/28/69

FIRST USED ON TC12

SCALE

SHEET / OF 1

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE

LTRD
BITS 6 & 7

SIZE	CODE	NUMBER	REV.
D	BS	TC12-Ø-LTRD	B

DIST.

DEC FORM NO. DRD 102A

REV B | SIZE D | CODE BS | NUMBER TC12-Ø-LTRD

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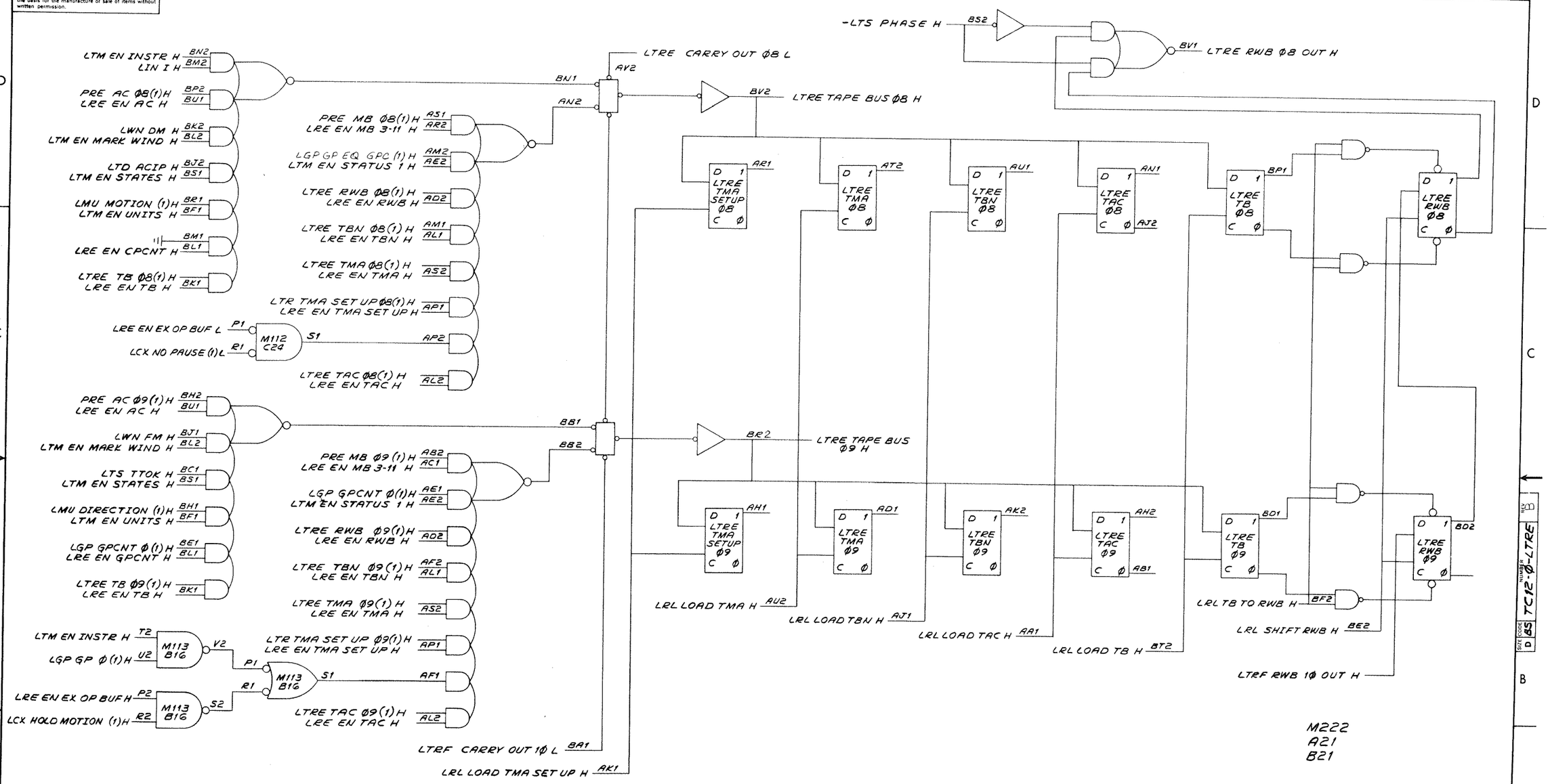

M222
A21
B21

REVISIONS	CHK	CHANGE NO.	REV
		00002	A
T Quillin		EM12-00017	B
L GALE 6/18/68		11-5-69	
GALE 11-14-69			

DEC FORM NO. DRD 102A

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

UNLESS OTHERWISE SPECIFIED

UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINAL SURFACE QUALITY
REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL

FINISH

		DATE
DRN.		12-8-68
CHK.		2/2/69
ENG.		2-28-69
PROJ. ENG.		2-28-69
PROD.		2/28/69

FIRST USED ON
TC12

SCALE

SHEET 1 OF 1

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
LTRE
BITS 8&9

SIZE	CODE	NUMBER	REV.
D	BS	TC12-Ø-LTRE	B

DIST.

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+3V C26U1 H — BS2

BV1 — LTRF RWB 1Ø OUT H

LTRF CARRY OUT 1ØL — AV2

BN1, AN2

BV2 — LTRF TAPE BUS 1Ø H

LTM EN INSTR H — BN2
LGP GP Ø1(1)H — BM2

PRF AC 1Ø(1)H — BP2
LRE EN AC H — BU1

LWN BM H — BK2
LTM EN MARK WIND H — BL2

LTS TIMING OK H — BJ2
LTM EN STATES H — BS1

LCS TAPE OK H — BR1
LTM EN UNITS H — BF1

LGP GPCNT 1(1)H — BM1
LRE EN GPCNT H — BL1

LTRF TB 1Ø(1)H — BK1
LRE EN TB H

PRF MB 1Ø(1)H — AS1
LRE EN MB 3-11 H — AR2

LGP GPCNT 1(1)H — AM2
LTM EN STATUS 1 H — AE2

LTRF RWB 1Ø(1)H — AD2
LRE EN RWB H

LTRF TBN 1Ø(1)H — AM1
LRE EN TBN H — AL1

LTRF TMA 1Ø(1)H — AS2
LRE EN TMA H

LTR TMA SET UP 1Ø(1)H — AP1
LRE EN TMA SET UP H

LRE EN EX OP BUF L — L2
LMU PRE U Ø (1) L — M2
M112 C24 — N2 — AP2

LTRF TAC 1Ø(1)H — AL2
LRE EN TAC H

D 1 LTRF TMA SETUP 1Ø C Ø — AR1
D 1 LTRF TMA 1Ø C Ø — AT2
D 1 LTRF TBN 1Ø C Ø — AU1
D 1 LTRF TAC 1Ø C Ø — AN1 — AJ2
D 1 LTRF TB 1Ø C Ø — BP1
D 1 LTRF RWB 1Ø C Ø

PRF AC 11(1)H — BH2
LRE EN AC H — BU1

LWN IM H — BJ1
LTM EN MARK WIND H — BL2

LTT TAPE FAIL DELAY H — BC1
LTM EN STATES H — BS1

LTC WRITE EN H — BH1
LTM EN UNITS H — BF1

LGP GPCNT 2(1)H — BE1
LRE EN GPCNT H — BL1

LTRF TB 11(1)H — BK1
LRE EN TB H

BB1, BB2

BR2 — LTRF TABE BUS 11 H

PRF MB 11(1)H — AB2
LRE EN MB 3-11 H — AC1

LGP GPCNT 2(1)H — AE1
LTM EN STATUS 1 H — AE2

LTRF RWB 11(1)H — AD2
LRE EN RWB H

LTRF TBN 11(1)H — AF2
LRE EN TBN H — AL1

LTRF TMA 11(1)H — AS1
LRE EN TMA H

LTR TMA SET UP 11(1)H — AP2
LRE EN TMA SET UP H

LTM EN INSTR H — P2
LGP GP Ø2 (1) H — R2
M113 E23 — S2 — T2

LRE EN EX OP BUF H — P1
LMU PRE U1 (1) H — R1
M113 E23 — S1 — U2

M113 E23 — V2 — AF1

LTRF TAC 11(1)H — AL2
LRE EN TAC H

D 1 LTRF TMA SETUP 11 C Ø — AH1
D 1 LTRF TMA 11 C Ø — AD1
D 1 LTRF TBN 11 C Ø — AK2
D 1 LTRF TAC 11 C Ø — AH2
D 1 LTRF TB 11 C Ø — BO1
D 1 LTRF RWB 11 C Ø — BO2

LRE TAPE CARRY IN L — BA1

LRL LOAD TMA SET UP H — AK1

LRL LOAD TMA H — AU2

LRL LOAD TBN H — AJ1

LRL LOAD TAC H — AA1

LRL LOAD TB H — BT2

LRL TB TO RWB H — BF2

LRL SHIFT RWB H — BE2

LTMR MAINT (1)H — R2
PRF AC 11(1)H — S2
LTMR MAINT (Ø)H — T2
LTR D3 READ H — U2
M121 C26 — V2

M222
A22
B22

REVISIONS	REV.	CHK	CHANGE NO.
	A		00002 T.Quillin L.GALE 6/18/68
	B		EM12-00003 T.Quillen L.GALE 9/30/68
	C		EM12-00015 L.GALE 10-31-68
	D		EM12-00017 T.Quillen GALE 11-5-69
	E		EM12-00019 L.GALE 12-12-69

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 | FRACTIONS ± 1/64 | ANGLES ± 0°30'
FINAL SURFACE QUALITY √
REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL

FINISH

		DATE
DRN.	Jack Quinn	12-8-68
CHK'D	V Scanlon	DATE 2/25/69
ENG.	R C Gayle	DATE 2-28-69
PROJ. ENG.	R C Gayle	DATE 2-28-69
PROD.	W Ball	DATE 3/19/69

FIRST USED ON TC12

SCALE

SHEET / OF /

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE
LTRF
BITS 1Ø&11

SIZE	CODE	NUMBER	REV.
D	BS	TC12-Ø-LTRF	E

DIST.

DEC FORM NO DRD 102A

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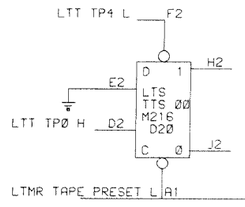
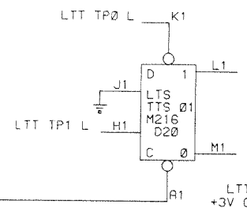
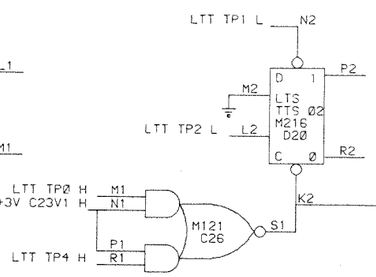
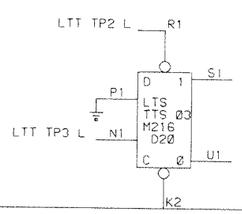
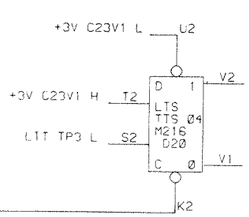
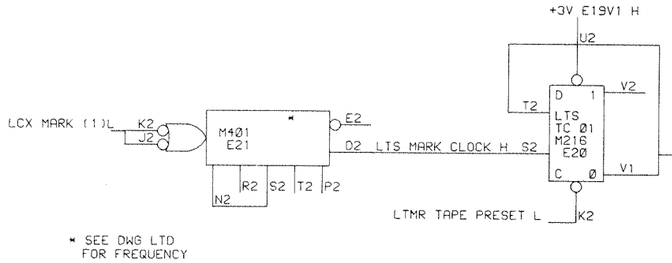




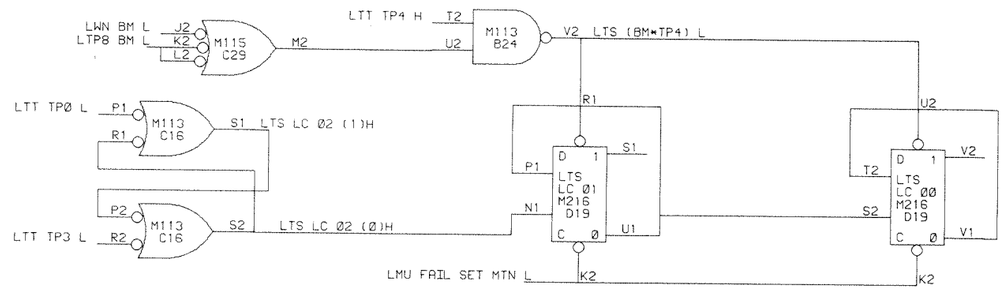




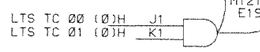


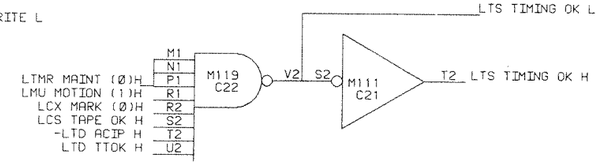


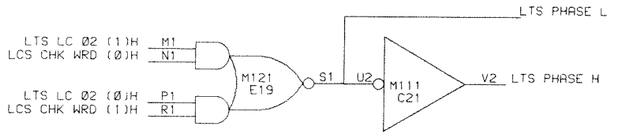
* SEE DWG LTD
FOR FREQUENCY



NOTE:
LMU FAIL SET MTN SERVES NO LOGICAL
FUNCTION FOR LC Ø1 AND LC Ø0







REVISIONS		
CHK	CHANGE NO.	REV.
	EM12-00002	A
	J SCANLAN 6-18-69	
	A WASHINGTON 6-5-69	
NR	EM12-00003	B
	A WASHINGTON 7-69	
	J SCANLAN 7-8-69	
MK	EM12-00015	C
	K BOGGS	
	J SCANLAN	
MK	EM12-00022	D
	[illegible]	

DRN. D.J. SHEPARD	DATE 8-9-69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. J.K.BISONETE	DATE 8-9-69	
ENG. L.GALE	DATE 8-9-69	TITLE: TAPE STATES
PROJ.ENG. L.GALE	DATE 8-9-69	
PROD. D.CALL	DATE 8-9-69	
FIRST USED ON TC12		SIZE D CODE BS NUMBER TC12-Ø-LTS REV. D
SCALE		SHEET 1 OF 1 DIST.

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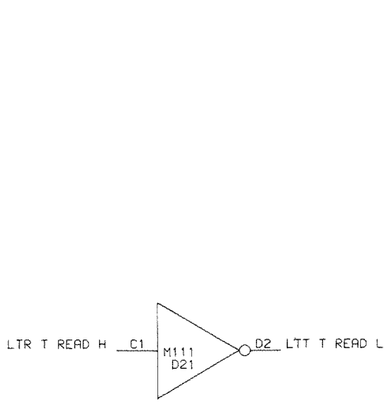

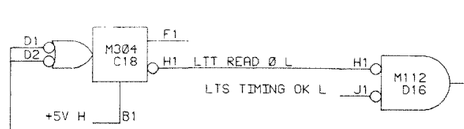

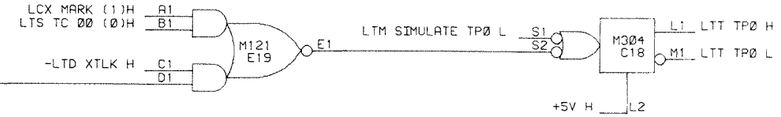

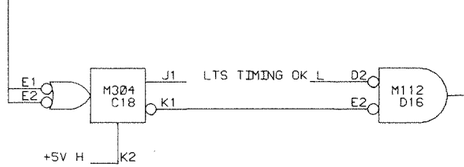

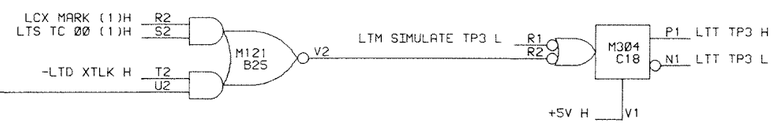

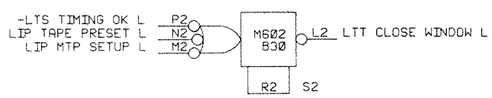

REVISIONS		
CHK	CHANGE NO.	REV.
PD	EM12-00001	A
	J FASSHAUER 4-15-69	
	L GALE 4-24-69	
NR	EM12-00005	B
	A WASHINGTON 7-18-69	
	L GALE 7-18-69	
	EM12-00015	C

DRN. D.L.SHEPARD	DATE 8-9-69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D J.K.BISONETE	DATE 8-9-69	TITLE: TAPE TIME PULSES
ENG. L.GALE	DATE 8-9-69	
PROJ. ENG. L.GALE	DATE 8-9-69	
PROD. D.CALL	DATE 8-9-69	
FIRST USED ON: TC12		SIZE D | CODE BS | NUMBER TC12-Ø-LTT | REV. C
SCALE		
SHEET 1 OF 1		DIST.

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LWN LOAD WINDOW H

-LWN MARK WORD H U2
LWN SHADE SHIFT IN H R1
L1 D1
WIND SHADE M212 A38
LWN MARK WORD H N1
+3V A34U1 H N2
P1 H2
D 1 E M212 A38 C Ø
C1 F1 E1
B1 LTT CLOSE WINDOW L

-LWN MARK WORD H U2
LWN WIND Ø1 (Ø)H S1
L1 F1
LWN WIND00 M212 A38
LWN MARK WORD H N1
PRE AC Ø8 (1)H N2
P1 H1
D 1 Ø M212 A38 C Ø
C1 E2 H2
B1

-LWN MARK WORD H U2
LWN WIND Ø2 (Ø)H U1
L1 H2
LWN WIND01 M212 A38
LWN MARK WORD H N1
PRE AC Ø9 (1)H R2
P1 K2
D 1 1 M212 A38 C Ø
C1 F2 H1
B1

-LWN MARK WORD H U2
LWN WIND Ø3 (Ø)H A1
L1 H1
LWN WIND02 M212 A38
LWN MARK WORD H N1
PRF AC 10 (1)H V1
P1 K1
D 1 2 M212 A38 C Ø
C1 J2 K2
B1

-LWN MARK WORD H U2
LWN WIND SHIFT IN H T2
L1 K2
LWN WIND03 M212 A38
LWN MARK WORD H N1
PRF AC 11 (Ø)H V2
P1 S2
D 1 3 M212 A38 C Ø
C1 K1 J1
B1

LCX MARK (1)H A1
LTS LC Ø0 (1)H B1
LTS LC Ø1 (1)H C1
M115 A32
D1 V1
M111 A35
U1 LWN MARK WORD H
LWN WORD MARK L

LWN WIND SHADE (1)L A1
LWN WIND Ø0 (Ø)L B1
M113 A36
C1 LWN SHADE SHIFT IN H

LWN WINDOW DATA IN H
E2 M111 A35 F2
LMU DIRECTION (1)H A1 B1
LMU DIRECTION (Ø)H C1 D1
M121 A34
E1 LWN WIND SHIFT IN H

LTMR MAINT (Ø)H D2
LTR M READ H E2
LTMR MAINT (1)H F2
PRE AC Ø8 (1)H H2
M121 A34
J2 LWN WIND DATA IN L

LTT TP3 H M1
LCX MARK (Ø)H N1
LCX MARK (1)H P1
LTT TPØ H R1
M121 A34
S1
LWN LOAD WINDOW L A1 B1 C1 D1
M617 B28
E1 LWN LOAD WINDOW H

LWN DM L D2
LWN FM L E2
M113 A36
F2 LWN (FM+DM) H

LWN FM L H1
LWN CM L J1
M113 A36
K1 LWN (FM+CM) H

LWN GM L D1
LWN DM L E1
M113 A36
F1 LWN (GM+DM) H R1
M111 A35
S1 LWN (GM+DM) L

LTS PHASE H F1
LWN WIND Ø0 (1)H H1
-LTS PHASE H J1
LWN WIND Ø0 (Ø)H K1
M121 A34
L1 LWN MARK WRITE L

LCX MARK (Ø)H E1
LTP8 TAPE (Ø)H F1
LWN WIND SHADE (1)H H1
M115 A32
J1 LWN EN WIND DECODE L

LWN EN WIND DECODE L D1
LWN WIND Ø0 (1)L E1
M112 A33
F1

LWN WIND Ø1 (Ø)H A1
LWN WIND Ø2 (Ø)H B1
LWN WIND Ø3 (Ø)H C1
D1
M117 A37
E1 A1
M111 A35
B1 LWN EM H
LWN EM L

LWN WIND Ø1 (Ø)H F1
LWN WIND Ø2 (Ø)H H1
LWN WIND Ø3 (1)H J1
K1
M117 A37
L1 C1
M111 A35
D2 LWN CM H
LWN CM L

LWN WIND Ø1 (Ø)H M1
LWN WIND Ø2 (1)H N1
LWN WIND Ø3 (Ø)H P1
R1
M117 A37
S1 D1
M111 A35
E1 LWN GM H
LWN GM L

LWN WIND SHADE (1)H K1
LWN WIND Ø0 (Ø)H L1
LTS LC Ø1 (1)H M1
M115 A32
N1
LWN EN WIND DECODE L B1
M112 A33
A1 C1

LWN WIND Ø1 (Ø)H D2
LWN WIND Ø2 (Ø)H E2
LWN WIND Ø3 (1)H F2
H2
M117 A37
J2 F1
M111 A35
H1 LWN DM H
LWN DM L

LWN WIND Ø1 (Ø)H K2
LWN WIND Ø2 (1)H L2
LWN WIND Ø3 (1)H M2
N2
M117 A37
P2 J1
M111 A35
K1 LWN FM H
LWN FM L

LWN WIND Ø1 (1)H R2
LWN WIND Ø2 (1)H S2
LWN WIND Ø3 (Ø)H T2
U2
M117 A37
V2 L1
M111 A35
M1 LWN BM H
LWN BM L

LWN WIND Ø1 (1)H A1
LWN WIND Ø2 (1)H B1
LWN WIND Ø3 (1)H C1
D1
M117 B33
E1 N1
M111 A35
P1 LWN IM H
LWN IM L

REVISIONS		
CHK	CHANGE NO.	REV.
NR	EM12-00005	A
	J FASSHAUER 4-15-69	
	L GALE 4-29-69	
	EM12-00015	B
	KEN BOGGS 10-14-69	
	J SCANLAN 10-17-69	
NR	EM12-00002	C
	A.WASHINGTON 3-13-70	
	J SCANLAN 3-16-70	
	EM12-00041	D
	T Marsh 10/31/70	

DRN D SHEPARD	DATE 3-9-69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
CHK'D L BISONETTE	DATE 3-9-69		
ENG L GALE	DATE 3-9-69	TITLE TAPE MARK WINDOW	
PROJ ENG L GALE	DATE 3-9-69		
PROD D SALL	DATE 3-9-69		
FIRST USED ON TC12		SIZE D / CODE BS / NUMBER IC12-Ø-LWN / REV. D	
SCALE			
SHEET 1 OF 1		DIST.	

MASTER DRAWING LIST

MAINTENANCE MANUALS NO.	TITLE	UNIT VARIATIONS VC12-0	VC12-C	VC12-N	VC12-S
VC12-Linc Scope Control		X			
VC12-C Color Control			X		
VC12-N Neg Intens Adapt				X	
VC12-S 611/601 Control					X

USED ON OPTIONS
PDP-12

REVISIONS

REV.	DATE	CHG. NO.	APP'D.
M	1/72	12-00099	R.M.
N	2/72	VC12S-00001	F.S.
P	8/72	EM12-58	RI

DRN. APREA	DATE 3/69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. HUTNAK	DATE 3/69	
ENG. GALE	DATE 3/69	TITLE PDP-12 Display Controls
PROJ. ENG. GALE	DATE 3/69	
PROD. CALL	DATE 3/69	
FIRST USED ON PDP-12		SIZE A / CODE ML / NUMBER VC12-0 / REV. P
SCALE		
SHEET 1 OF 2		DIST.

PRINT SET VC12-0	VC12-C	VC12-N	VC12-S			DWG. NO.	REV. LET.	NO. OF SHEETS	TITLE	OPTION NO.
X						D-FD-VC12-0-4	C	1	Linc-8 Scope Display	
X		X				D-BS-VC12-0-DSC	F	1	DSC Display Control	
X			X			D-BS-VC12-0-DSX	F	1	DSX Horizontal D-A	
X						D-BS-VC12-0-DSY	B	1	DSY Vertical D-A	
X						D-BS-VC12-0-DSI		1	Display Int Reg	
	X					D-CS-VC12-C-COL	A	1	Color Control	
X	X	X	X			A-PL-VC12-0-0	A	1	PDP-12 Scope Control	
	X					A-SL-VC12-C-2		1	VC12C Software List	
X						A-SP-VC12-0-5		5	VC12 Specifications	
	X					A-SP-VC12-C-1		5	Specifications (Color Control)	
		X				D-IA-7006975-0-0	#	1	Cable Assy (VC12N)	
			X			D-CS-VC12-S-3		1	611/601 CIRCUIT SCHEMATIC	
			X			D-CS-VC12-S-1		1	611 SCOPE CONTROL	
			X			A-SP-VC12-S-2		14	INSTALLATION ACCEPTANCE PROCEDURE	
			X			C-IA-7008521-0-0	#	1	611/601 SCOPE CABLE	
			X			C-IA-7008793-0-0	#	1	611/601 RELAY WIRING DIAGRAM	

TITLE				
PDP-12 Display Controls	SHEET 2 OF 2	SIZE A / CODE ML	NUMBER VC12-0	REV —

DRA 132

DEC 16 (325) 1048-1-N471

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY DATE D. MACKLIN 1-8-72	CHECKED DATE 1-31-72	SECTION 1
ENG D Macklin DATE 2-2-72	PROD DATE 2-4-72	ISSUED SECT. 1

ITEM NO.	DWG NO./PART NO.	DESCRIPTION	QUANTITY/VARIATION VC12-0	VC12-C	VC12-N	VC12-S
	A615	D-A	2			
	M101	Bus Data Interface	1			
	M115	Nand Gate	1			
	M117	Nand Gate	1			
	M216	Six Flop Flops	2			
	M711	Display Control	1			
	M7601	611/color Control		1		1
	W681	Scope Intensifier			1	
	D-IA-7000238-0-0	Internal Scope Cable	*			
	D-IA-7006975-0-0	Cable Assy (VC12N)			1	
	D-AD-7005963-0-0	Relay Panel Assy.	**			
	12-03185-2	Precision Power Supply ± 15V	Δ			
	C-AD-7006045-0-0	Power Supply BRKT Assy.	Δ			

* Quantity of "One" when adding this option (VC12) to a PDP-12-C System.

** Quantity of "One" when adding this option (VC12) to a PDP-12-C System with no added AD12 or DR12 option.

Δ Quantity of "One" Each when adding this option (VC12) to a PDP-12-C System with no added AD12 or KW12 option.

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO.
PDP-12 Display Controls		A	PL	VC12-0-0	A	VC12S-00001
	SHEET 1 OF 1	DIST.				

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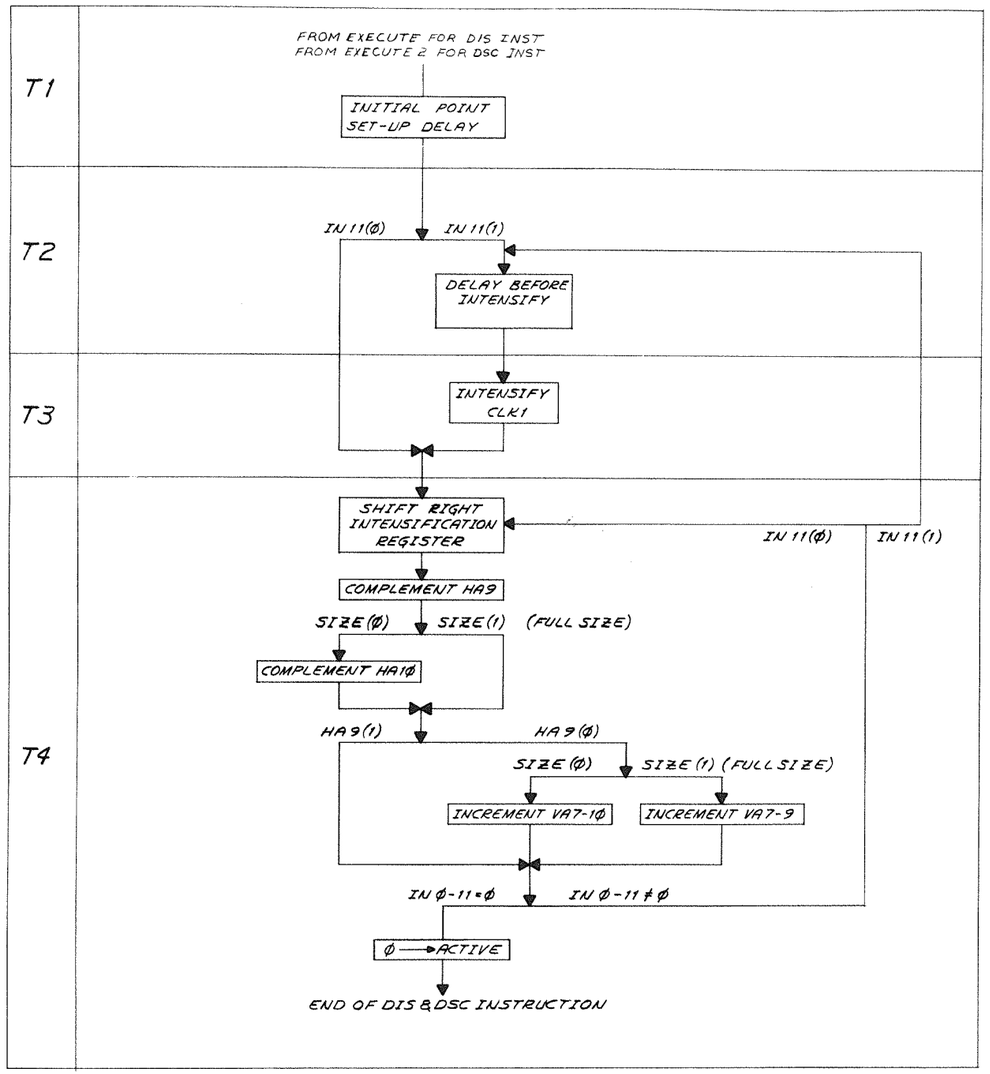

TIMING TABLE (μSECS)

	STD SYS	COMMENTS
T1	25.Ø	CAN BE CHANGED BY REPLACING 30K Ω RESISTOR ADJACENT TO POLARITY SWITCH ON M711 15K Ω = 1Ø μSECS 7K Ω = 5 μSECS
T2	1.5 OR 7.Ø	PULSE REPETION RATE SWITCH SETS DESIRED TIME
T3	.5 OR 1Ø.Ø	INTENSIFICATION PULSE WIDTH IS DETERMINED BY WIDTH SWITCH SETTING ON M711
T4	.8	NON-ADJUSTABLE FIXED TIME

REVISIONS				
CHK	CHANGE NO.	REV.		
	00002	A	T. QUILLIN L. GALE	6/18/68
	EM12-00008	B	L. GALE	8-15-68
	EM12-00033	C	L. GALE	2-9-70

PARTS LIST

QTY.	DESCRIPTION	PART NO.	ITEM NO.

UNLESS OTHERWISE SPECIFIED
UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINAL SURFACE QUALITY
REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL

FINISH

DRN.		DATE 2/22/69
CHK'D.		DATE 2/27/69
ENG.		DATE 2-28-69
PROJ. ENG.		DATE 2-28-69
PROD.		DATE 3/2/69

FIRST USED ON
VC12

SCALE

SHEET 1 OF 1

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
LINC-8 SCOPE DISPLAY DIS & DSC

SIZE D | CODE FD | NUMBER VC12-Ø-9 | REV. C

DIST.

DEC FORM NO. DRD 102A

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PRC MB5 (1)H
DSC LD IN H
A1 B1 C1 — M115 C29 — D1 — DSC LD MB5 L

DSI IN 11(Ø)H DP1
DSI IN 10(Ø)H DD2
DSI IN 9(Ø)H DE1
DSI IN 8(Ø)H DJ1
DSI IN 7(Ø)H DF2
DSI IN 6(Ø)H DH1
DSI IN 5(Ø)H DK1
DSI IN 4(Ø)H DH2
DSI IN 3(Ø)H DJ2
DSI IN 2(Ø)H DL2
DSI IN 1(Ø)H DL1
DSI IN Ø(Ø)H DK2
DSC CLK 1 OUTPUT

DSC LD HORZ H
D 1 DSC ACTIVE C Ø

DSC BUSY L — DM2 — DN2 — DSC BUSY H

DSC SHFT H — DN1 — CD2 CE2
DSC SHFT L

DSI IN 11(Ø)H DP1

DSC ACTIVE (1) H

DSC LD HORZ H — DLY = 25 μSEC — DSC INITIAL DELAY L

CPT TS5 B(1) H CV2
DSC START DSC H CT2
CD1 — DSC CLR V8-11 L
CU2 — DSC CLR V7 L

CST IO PRESET L CR2
PRC AC Ø4(1)H DD1
RCL LOAD MSC4 H CV1
D 1 DSC SIZE C Ø DU2

DE2 — DSC HA 1Ø H
DSC SHFT L
DM1 — DSX HA 9(1) H
DP2 — DSY VA 1Ø(Ø)H
DSC SIZE(Ø)H
DR2 — DSC VA 9 H

DSX HA 9 (1) L DV2 — DF1 — DSC VA 1Ø H

CPT TS5 B(1) H CP2
CPT(DIS+DSC)H CE1
CPS EXECUTE B(1)H CH1
-DSC BUSY H DM2
CJ2 — DSC INITIALIZE L

-INS DIS H CL2
-INS DSC H CL1
CM2 — DSC LD IN H
CK2 — DSC LD VERT H
CST IO PRESET L CR2
DSC CLR V8-11L CD1
DSC LD MB5 L CH2
DS2 — DSC LD HORZ H
CF2 — DSC SET IN 11 L

DSI IN 11 (1) H CF1

CLK 1 OUTPUT
CLK 2 — LONG CLK 1 INPUT — CF1 — DSI IN 11 (1) H
SHORT CLK 2 — START

(CD2, CE2 OPTIONAL INPUTS CLAMPED AT +3V)

DT2 — DSC INTEN L
DV1 — DSC Z DRIVER H
DU1 — DSC INTEN H

H2 — W512 N27 — F2

J2 K2 L2 — WGB1 MØ3 — N2 — DSC 5Ø3 INTEN L
A2 B2
+1Ø -15
VC12-N OPTION

SLA (DSC * EXECUTE 2) L — R2 S2
- DSC BUSY L — T2 U2
M121 E22 — V2 — DSC START DSC H

DSY V8 (1) H CS1
CU1 — DSC 8 L

DSY V7 (1) H CS2
CV2 — DSC 7 L

DSY VA 9(Ø)H CJ1
D 1 VA8 C Ø
D 1 VA7 C Ø
DSC INITIALIZE L

M711 C37 D37 — REV H ON SEPARATE SHEET

REVISIONS	REV	CHANGE NO	CHK	
	A	00002	end	T. GUILLIN L. GALE 6/18/68
	B	EM12-00033	end	L. GALE 2-7-70
	C	EM12-00037	FV	L. GALE 3-9-70
	D	EM12-00044		GALE 7/29/70
	E	12-00059		SCANLON 2-7-71
	F	EM12-00056	TM	IKNAIAN 2-14-72

QTY.	DESCRIPTION	PART NO.	ITEM NO.
	PARTS LIST		

UNLESS OTHERWISE SPECIFIED
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINAL SURFACE QUALITY √
REMOVE BURRS AND BREAK SHARP CORNERS
MATERIAL
FINISH

DRN Joe Aguia DATE 4-SEPT-68
CHK'D J. Scanlon DATE 2/27/69
ENG W. Clayton DATE 2-28-69
PROJ. ENG. K. Martin DATE 2-28-69
PROD. A. Bell DATE 2-24-69
FIRST USED ON VC12
SCALE
SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE
DSC DISPLAY CONTROL

SIZE D | CODE 08S | NUMBER VC12-Ø-DSC | REV F | DIST.

DEC FORM NO DRD 102A

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DSX X OUT L

DSX X DEF L — EH2 — EJ2

FU2 FV2 — CHAN — FS2 FT2 — DSC LD HORZ H — PRA MB 0 (1) H

H3 — EU2 FD2 — PRB MB 3 (1) H

H4 — EP1 — PRC MB 4 (1) H

H5 — EU1 — PRC MB 5 (1) H

H6 — EV1 — PRD MB 6 (1) H

EP2 ET2 ES2 — H7 — EV2 EU2 — PRD MB 7 (1) L

EE2 FH1 FF1 — H8 — FK1 +3V FE1 — PRE MB 8 (1) L

EH2 EJ2 OUTPUT

+5V EA2
-15V EB2
-15V H.Q. EE2
+15V H.Q. ED2
H.Q. GND EF2
+5V FA2
A615

G783 F38 / G783 F39

GND	A1	DSX CHAN (0) H
	B1	GND
	C1	DSC Z DRIVER L
	D1	
	E1	H.Q. GND 37
	F1	GND
	H1	DSX X DEF L
	J1	H.Q. GND 36
	K1	DSY Y DEF L
	L1	GND
	M1	COL RED L/SG11 INT H **
	N1	
	P1	
	R1	GND
	S1	DSC 503 INTEN L/ ERASE DONE
	T1	GND
	U1	
	V1	

*W028 F38 / *W028 F39

	A2	GND
	B2	DSX CHAN (0) H
	C2	DSX X OUT L
	D2	GND
	E2	H.Q. GND 37
	F2	GND
	H2	DSC Z DRIVER H
	J2	GND
	K2	DSY Y OUT L
	L2	GND
	M2	H.Q. GND 36
	N2	GND
	P2	COL RED L/SG11 INT H **
	R2	GND
	S2	GND
	T2	GND
	U2	DSC 503 INTEN L/ERASE DONE **
	V2	

H9 — FJ1 — PRE MB 9 (1) L

H10 — FL1 — PRF MB 10 (1) L

H11 — FK1 FE2 FD2 +3V — PRF MB 11 (1) L — DSC LD HORZ H

DSC INITIALIZE L — FL2 — HA9 — FR2 FM2 FV2 FP2 — +3V — DSC SHIFT H

+3V — FK2 — HA10 — FJ2 FF2 FH2 — DSC INITIALIZE L — DSC HA10 H

A615
E37
F37

NOTE: HQ POWER FOR THIS MODULE AND E,F36 IS DERIVED FROM HQ POWER SUPPLY SHOWN ON AD12-0-YAD
*AG783 CABLE ASSY. MAY ALSO BE USED.
** USED WITH VC12-S OPTION

REVISIONS

CHK	CHANGE NO.	REV.
	00002	A
	EM12-00008	B
	EM12-00039	C
	12-00096	D
	EM12 00054	E
	VC12S-00001	F

T. QUILLIN L. GALE 6/18/69
L. GALE 8-15-69
L. GALE 8-25-70
L. GALE 8-2-71
R. MOORE 6-12-71
R. MOORE 10-2-71
R. MOORE 1-8-71
F. STRAIGHT 2-23-72

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

UNLESS OTHERWISE SPECIFIED
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINAL SURFACE QUALITY REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL

FINISH

DRN.	DATE	2-16-69
CH'D.	DATE	2/27/69
ENG.	DATE	3-4-69
PROJ. ENG.	DATE	3-4-69
PROD.	DATE	3/24/69

FIRST USED ON VC12

SCALE

SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE
DSX HORIZONTAL D-A

SIZE	CODE	NUMBER	REV.
D	85	VC12-0-DSX	F

DIST.

DEC FORM NO. DPD 102A

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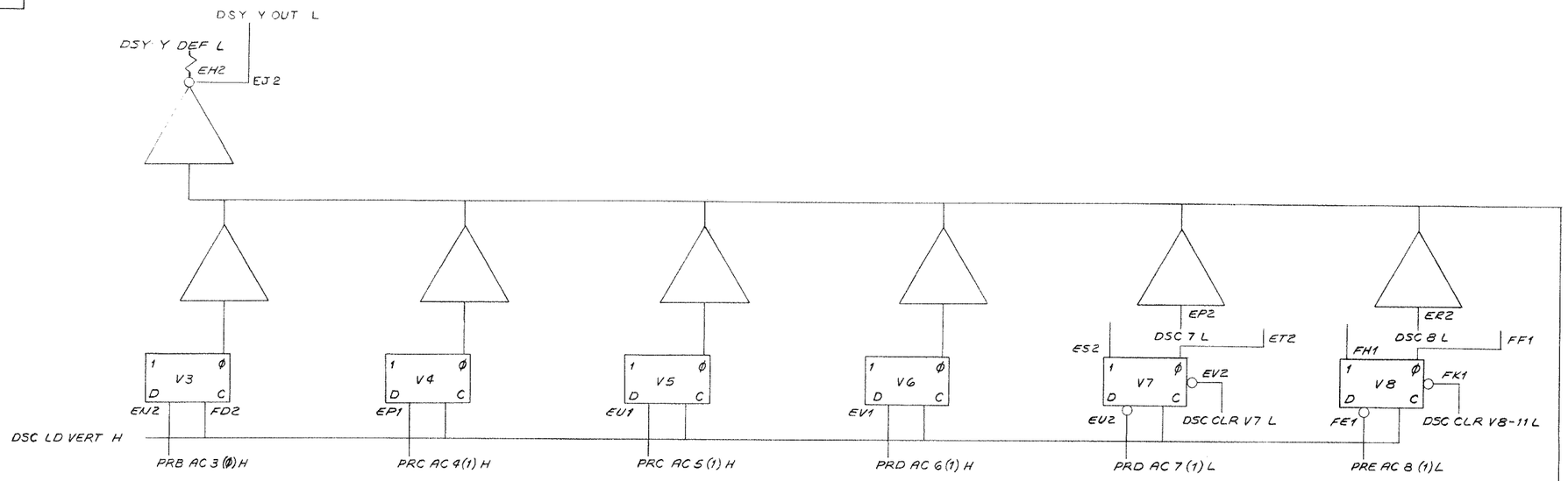

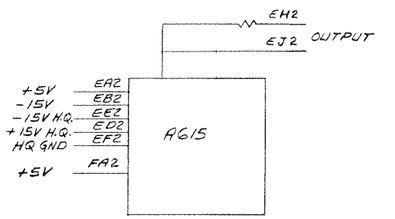

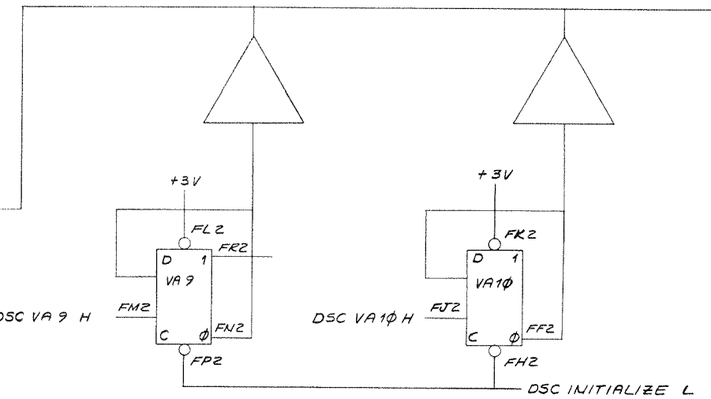

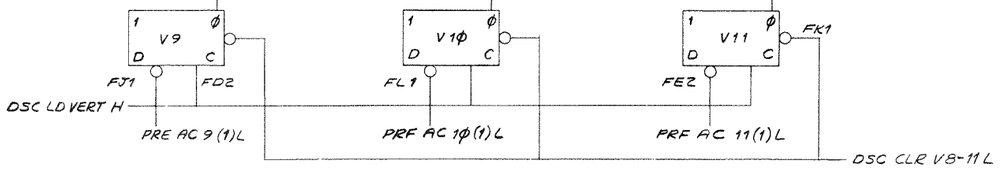

AG15
E36
F36

QTY.	DESCRIPTION	PART NO.	ITEM NO.
	PARTS LIST		

REVISIONS	REV.	CHANGE NO.	CHK	
	A	2000		7 QUIGLEY L GALE 6/16/69
	B	EM1200039		7 QUIGLEY L GALE 8-20-70
				L GALE 8-25-70

UNLESS OTHERWISE SPECIFIED
UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINAL SURFACE QUALITY
REMOVE BURRS AND BREAK SHARP CORNERS
MATERIAL
FINISH

DRN.	Joe Jones	DATE 6-2-68
CHKD.	D Scanlon	DATE 2/27/69
ENG.	P Clayton	DATE 2-28-69
PROJ. ENG.	P Clayton	DATE 2-28-69
PROD.	Bill Ball	DATE 2/28/69
FIRST USED ON	VC12	
SCALE		
SHEET	OF	

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE
DSY
VERTICAL D-A

SIZE	CODE	NUMBER	REV.
D	85	VC12-Ø-DSY	B

DIST.

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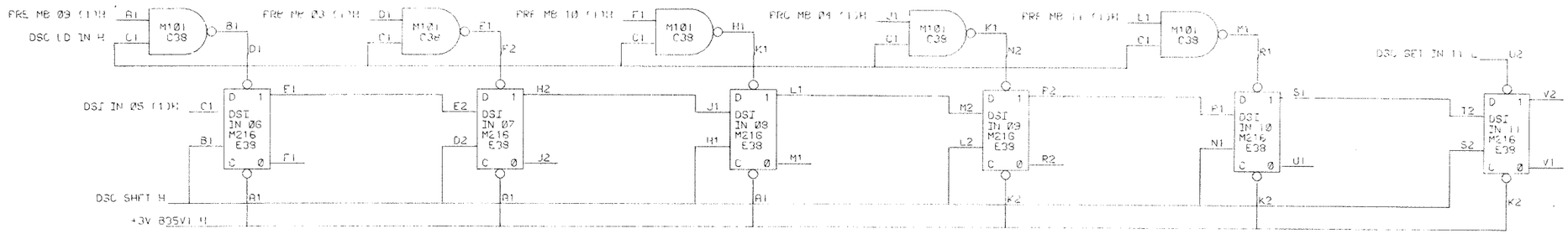

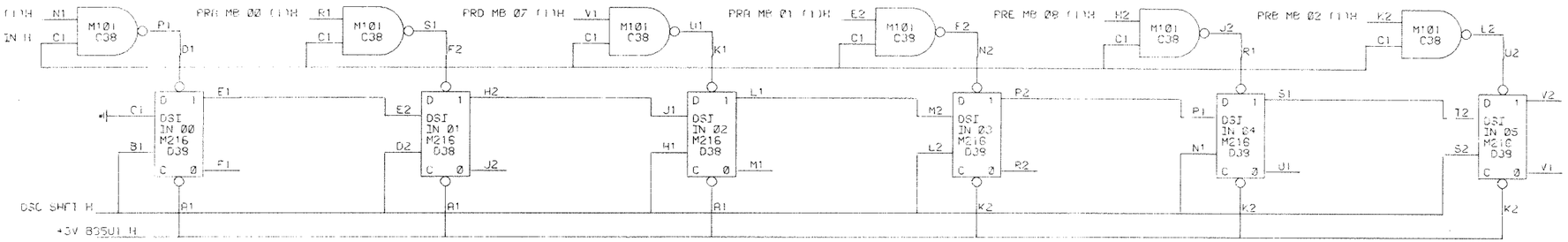

REVISIONS		
CHK	CHANGE NO.	REV.

DRN.	DATE	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D.	DATE	
ENG.	DATE	TITLE: DISPLAY INT REG
PROJ. ENG.	DATE	
PROD.	DATE	
FIRST USED ON: VC12		SIZE: D; CODE: 85; NUMBER: VC12-Ø-DSI; REV.: ØØ
SCALE		
SHEET 1 OF 1		DIST.

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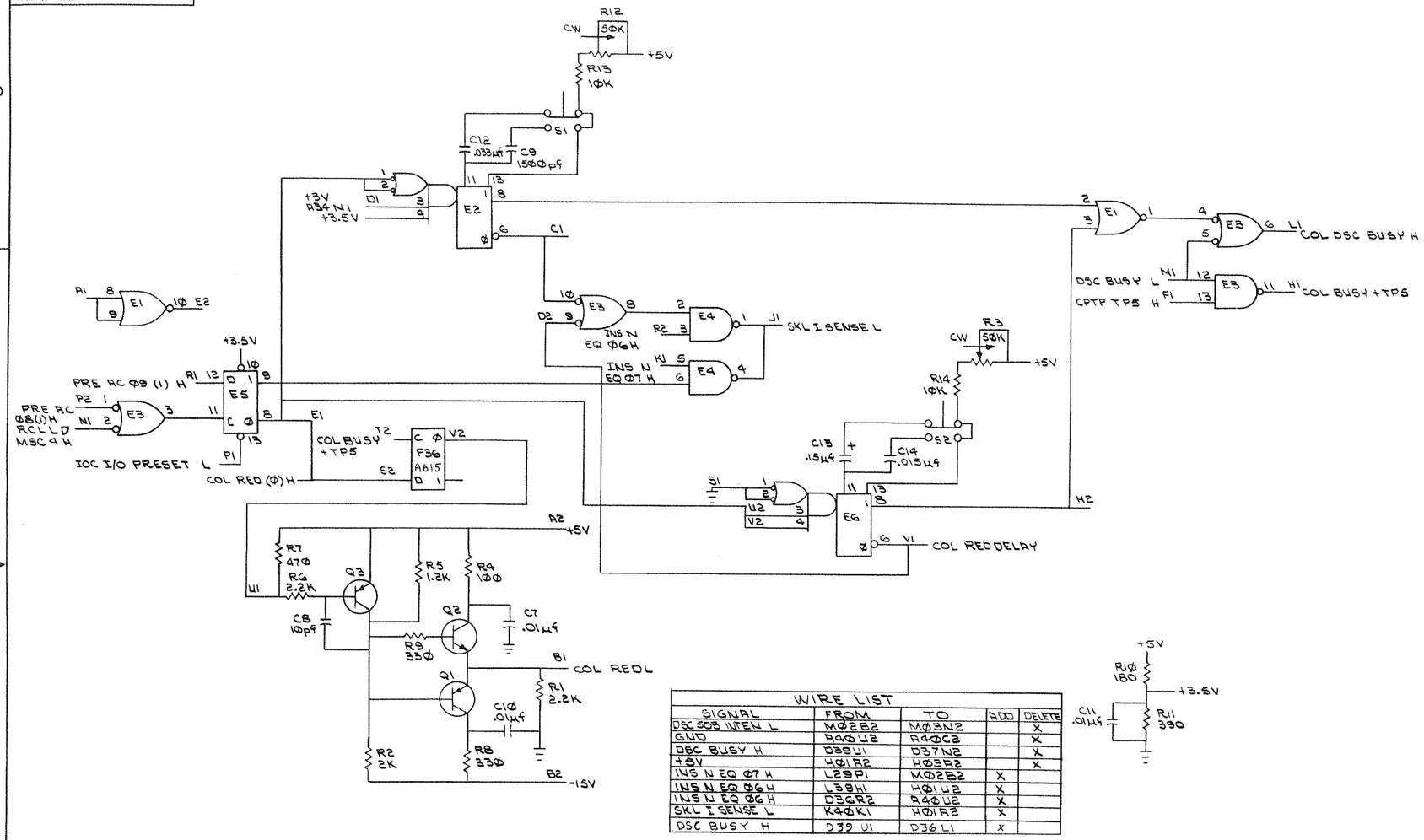

NOTE:
HAND WIRING LIST BELOW REQUIRED BEFORE INSTALLING INTO THE PDP-12

WIRE LIST

SIGNAL	FROM	TO	ADD	DELETE
DSC 503 WTEN L	M02B2	M03N2		X
GND	R40U2	R40C2		X
DSC BUSY H	D39U1	D37N2		X
+5V	H01R2	H03R2		X
INS N EQ Φ7 H	L29P1	M02B2	X	
INS N EQ ΦG H	L39H1	H01U2	X	
INS N EQ ΦG H	D36R2	R40U2	X	
SKL I SENSE L	K40K1	H01R2	X	
DSC BUSY H	D39 U1	D36 L1	X	

D36
M7601

REVISIONS		
CHK	CHANGE NO.	REV
	VC12C-00001	A

K. Tatum 11-3-71
F. STRAIGHT
F. Straight 11-5-71

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
VC12-C		PARTS LIST		

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES

DECIMALS	ANGLES
.XXX = .005 .XX = .02 .X = .1	±0° 30'

REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓

MATERIAL —

FINISH —

DRN.	J. Blue	DATE 30 Jun 71
CHK'D	K. Tatum	DATE 8/13/71
ENG.	F. Straight	DATE 8/16/71
PROJ. ENG.	L. Tenney	DATE 8/16/71
PROD.	M. Tracy	DATE 8/19/71

NEXT HIGHER ASSY. —

SCALE NONE

SHEET OF

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE
COLOR SCOPE CONTROL

SIZE	CODE	NUMBER	REV.
D	CS	VC12-C-COL	A

DIST.

DEC FORM NO
DRD 102-B

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DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

ENGINEERING SPECIFICATION

DATE 9/24/69

TITLE VC12 SPECIFICATIONS

REVISIONS

REV	DESCRIPTION	CHG NO	ORIG	DATE	APPD BY	DATE

GENERAL

The VC12 Scope Control consists of electronic circuitry designed to convert digital voltage levels into analog voltages for application to the input amplifier circuitry of suitable CRT display scopes. Timing and logical circuitry designed to permit the display of information derived from the PDP-12 central processor and memory asynchronously in either of two modes, Point Plotting or Character Display, is provided.

INSTRUCTIONS

DIS mnemonic 140+20I+α

DSC mnemonic 1740+20I+β

DIGITAL TO ANALOG CONVERTER

VOLTAGE RANGE

Condition: digital input = 000_8 Ø v ± .3 v

digital input = 777_8 -5.85 v ± .3 v

DEFINITION

The output voltage range is divided into 512 equal parts ± 1/2 part.

TEMPERATURE STABILITY

.02% / ^{o}C

ENG	APPD	SIZE	CODE	NUMBER	REV
R. L. Conglan	L. Gale	A	SP	VC12-0-5	

DEC FORM NO. DRA 107

ENGINEERING SPECIFICATION

digital CONTINUATION SHEET

TITLE VC12 SPECIFICATIONS

TOTAL TRANSITION TIME

.3% of maximum voltage transition 5 μsec + 25 nsec/ft. of output cable length

DC OUTPUT IMPEDANCE

100 Ωmin. -- 200Ωmax.

WORST CASE LOAD CONDITIONS

1 KΩmin in parallel with 5000 pf max.

MAXIMUM CABLE LENGTH

200 ft.

DIGITAL CIRCUITRY

Input Conditions: 2 TTL unit load at the data input from processor registers.

Other digital signals are generated on the M711 logical control circuit.

DISPLAY CHARACTER

Two additional register elements, drivers, and weighted resistors are provided to add the weighted values of 2 increments and 4 increments under control of the M711.

LOGICAL CONTROL CIRCUITRY

INPUT LOADS

TS5	3 TTL unit loads
EXECUTE B(1)	1 TTL unit load
DIS	1 TTL unit load
DSC	1 TTL unit load
DIS + DSC	1 TTL unit load
PIE DSC • EXECUTE 2	2 TTL unit loads
PRFAC(4)1	1 TTL unit load

SIZE	CODE	NUMBER	REV
A	SP	VC12-0-5	

DEC FORM NO DRA 108

OUTPUT DRIVE CAPABILITIES

BUSY H	10 TTL unit loads
BUSY L	8 TTL unit loads
Intensify H	10 unit loads if pol switch -
Intensify L	10 unit loads if pol switch +
Intensify A*	20 ma to +3 v
	8 ma to Ø v

* Intensify A is a push pull driver exhibiting 100 (nominal) drive impedance to ground or plus five volts. The polarity switch allows change of pulse polarity by connecting the input to the driver to either Intensify H or Intensify L outputs. The output has an integrator circuit built in to limit rise and fall time effects on the analog output.

INTENSIFICATION PATTERN REGISTER

BUFFER SIZE AND TYPE

12 bit shift register

NATURE OF LOAD SOURCE

1's transfer from memory buffer

INSTRUCTION EXECUTION TIME

DIS: $<27 + a\,\mu sec$ where a = .5 μsec if width switch is MIN position or
a = 10 μsec if width switch is MAX position.

DSC: $<27.5 + 1.5a + 2.5b + .5b$

where a = number of non intensified points **
b = number of intensified points ***

** The PRR switch sets the time between intensification pulses during the execution of the DSC instruction.

Thus, the third term of the DSC time formula should read as written if the PRR switch is in FAST position or +7.6b for the PRR switch in SLOW position.

*** The WIDTH switch sets the width of the intensification pulse.

Thus, the fourth term of the DSC should read as written if the WIDTH switch is MIN or + 10b if the WIDTH switch is set to MAX position.

TIMING MODE

Asynchronous

NOTE: Execution times indicate the actual duration of execution of the display instructions; because of the asynchronous nature of the VC12 control the processor is free to execute other nondisplay instructions after 3.2 μsec for DIS instructions or 4.8 μsec for DSC instructions.

The PDP-12 processor will pause if instructed to execute a display instruction before completion of a previous display instruction unless forced to abort completion of the first display instruction in favor of execution of the second instruction by the assertion of a tape interrupt.

LOGICAL FUNCTION of VC12 shall be as illustrated on prints

FD-PDP12-Ø-17
FD-PDP12-Ø-18
FD-PDP12-Ø-2Ø
FD-VC12-Ø-4

CHARACTER DISPLAY

CHARACTER SIZE

Defined by a flip flop storage element in conjunction with circuitry in the logical control and Digital to Analog Converter modules.

The flip flop storage element is jam loaded from the contents of AC bit 4 by pulses produced during the execution of ESF instruction (Code ØØØ4). $C(AC_4)$ = 1 indicates half size.

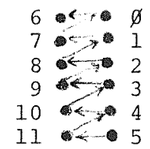
POINT INCREMENT SIZE

Half size: 24 mv. ±3 mv.*

Full size: 48 mv. ±5 mv.*

* On a VR12 adjusted to display a 6.75 inch by 9 inch image, half size character point increments shall be .026 inches on the vertical axis and .035 inches on the horizontal axis; and full size character point increments shall be .052 inches on the vertical axis and .070 inches on the horizontal axis.

THE ANALOG CIRCUITRY, CONTROL AND PATTERN INTENSIFICATION REGISTERS shall be constructed that the beam will be directed on the CRT to two parallel 6 point lines, the points of which are to be intensified by a 1 in the appropriate memory bit as indicated in the diagram below.



DISPLAY CHANNEL

A flip flop storage element shall be provided to apply to an appropriate output pin a digital voltage capable of driving up to 10 TTL gate input loads.

Load Source (channel flip flop) bit Ø of the alpha register referenced if a DIS instruction, or memory loc ØØØ1 if a DSC instruction.

"AND" logic gates must be provided at the CRT display logically select the intensification pulses defined to coincide with the analog points to be displayed on either channel as defined by the logic level.

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

SOFTWARE LIST

MADE BY Fred STRAIGHT DATE 10-5-71	CHECKED Fred Straight DATE 10-5-71	SECTION
ENG Fred Straight DATE 10-5-71	PROD M. Conroy DATE 10-7-71	ISSUED SECT.

LEGEND

D DOCUMENT
DN DOCUMENT CHANGE NOTICE
PA PAPER TAPE ASCII
PB PAPER TAPE BINARY
PM PAPER TAPE READ-IN-MODE

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	QUANTITY / VARIATION VC12-C	KIT CHECK BY ____ DATE ____	INSTALLATION CHECK BY ____ DATE ____
	MAINDEC-12-D6BC-D	VR14/VR20 MAINTENANCE DIAGNOSTIC WRITE UP	1		
	MAINDEC-12-D6BC-PB	VR14/VR20 MAINTENANCE DIAGNOSTIC BINARY	1		

TITLE: VC12 COLOR CONTROL	ASSY. NO.	SIZE A	CODE SL	NUMBER VC12-C-2	REV. / ECO NO
	SHEET 1 OF 1	DIST.			

DEC FORM NO.
DRA 120

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DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

ENGINEERING SPECIFICATION

DATE SEPT.21,1971

TITLE VC12-C SPECIFICATIONS

REVISIONS

REV	DESCRIPTION	CHG NO	ORIG	DATE	APPD BY	DATE

ENG	APPD	SIZE	CODE	NUMBER	REV
Fred Straight 9/71	7/26/71	A	SP	VC12-C-1	

DEC FORM NO. DRA 107

GENERAL DESCRIPTION

The VC12-C VR20 Color Display Control is a one module option to the PDP-12 computer. It adds the logic to the VR14 scope control (VC12-Ø) necessary to operate a VR20 two Color Display.

The following ECO's are required before installation of the VC12-C:

ECO	Description
EM12-ØØØ39	Change wiring to scope portion of EM12.
12-ØØØ96	Adds required wiring to internal scope cable 7006238 and BC12A
EM12-ØØØ51	Adds required wiring to EM12.

PROGRAMMING

There are four instructions unique to the VC12-C option. A summary of these is given below. For reference the standard VR14 display instructions* are described also.

*Reference Specification A-SP-VC12-Ø-5

	SIZE	CODE	NUMBER	REV
	A	SP	VC12-C-1	

DEC FORM NO DEC 16-(381)-1022-N370 DRA 108

VC12-C INSTRUCTION SUMMARY (LINC MODE)

MNEUMONIC	CODE	DESCRIPTION
ESF	ØØØ4	If the accumulator =14 the ESF instruction will set the VR20 to red mode. If the AC=1Ø the green mode will be set. I/O preset sets the green mode.
RSKP	447 + 20I	Skip on red mode if I=Ø Skip on green mode if I=1
DSKP	446 + 20I	Skip on color not ready if I=Ø Skip on color ready if I=1 Used after the ESF instruction to indicate the VR20 has switched colors

VC12 INSTRUCTIONS (REFERENCE)

MNEUMONIC	CODE	DESCRIPTION
DIS	140 + 20I + ∅	Display a dot. If I=Ø the contents of the ∅ register is the horizontal coordinate. If I=1 the contents of ∅ incremented by one is the horizontal coordinate. If bit Ø of the contents of ∅ = Ø channel 1 is set. If bit Ø=1 channel 2 is set. In all cases the AC holds the vertical coordinate
DSC	174Ø + 20I + β	Display character instruction displays at 2 x 6 dot matrix. The address of the pattern word is either taken from the contents of β, (I=Ø) or contents of β + 1, (I=1)

NOTE:

Previous to this option linc codes Ø466 and Ø467 were implied unconditional skips. Any programs that use these codes and are to be customer modified to utilize the color scope will require redefining these codes.

Programs written on the dial assembler are unaffected because dial defines the skip as Ø456.

PROGRAM EXAMPLE

This routine illustrates a method of displaying two dots at center screen on the VR20. One dot will be in green on channel 1, the other in red on channel 2.

```
MNEUMONIC          ADDRESS/CONTENTS      COMMENT

        *20
Start,  LDA          4Ø2Ø/1ØØØ      /Store Address,
        XADD1        4Ø21/ØØ45      /of X Coordinate,
        STC ALPHA    4Ø22/4ØØ2      /into the ∅ register
        LDA I        4Ø23/1Ø20      /Put green mode,
        1Ø           4Ø24/ØØ10      /No. into AC.
        ESF          4Ø25/ØØØ4      /set green mode.
        DSKP I       4Ø26/Ø466      /done switching green?
        JMP.-1       4Ø27/6Ø26      /no wait.
        CLR          4Ø3Ø/ØØ11      /set vertical coord.=Ø
        DIS ALPHA    4Ø31/Ø142      /display a green dot.
        LDA          4Ø32/1ØØØ      /Store address of,
        XADD2        4Ø33/ØØ46      /X coord. plus channel,
        STC          4Ø34/4ØØ2      /2 Into the ∅ register.
        LDA I        4Ø35/1Ø2Ø      /Put red mode no.,
        14           4Ø36/ØØ14      /into the AC.
        ESF          4Ø37/ØØØ4      /set red mode.
        DSKP I       4Ø4Ø/Ø466      /Done switching to red?
        JMP.-1       4Ø41/6Ø4Ø      /No wait.
        CLR          4Ø42/ØØ11      /set vertical coord=Ø.
        DIS ALPHA    4Ø43/Ø142      /Display A red dot.
        JMP START    4Ø44/6Ø2Ø      /Do it all again.

XADD1,  14ØØ         4Ø45/14ØØ      /X coord. Chan 1
XADD2,  54ØØ         4Ø46/54ØØ      /X coord. Chan 2

ALPHA =2                            /defined for assembler
DSKP  =446                          /
```

GENERAL SPECIFICATIONS

NOMINAL COLOR SWITCHING DELAYS:

Red to Green	1.6 MS
Green to Red	.3 MS

DETAILED DESCRIPTION

The M7601 module is utilized only when changing or testing color status on the VR20.

Initially "IOC I/O presset L" sets the pre-color flip-flop to the green mode. The first instruction following sets the scope to green via signal "CoL Busy + TP5" The color flip-flop is part of the A615 D/A module located in slot F36. When a program color change is initiated "RcL LD MSC 4 H" toggles the pre-color flip-flop. The one shot applicable to the color change is triggered and at TP5 time (if no display in progress) the color flip-flop is set to the desired mode. The VR20 scope starts changing color. During this period no display is allowed because "CoL DSC Busy H" is asserted for the length of the delay. Any attempt at displaying will hang the processor in internal pause.

The active one-shot enables the other input to the "INS N EØ 6 H" gate and the instruction Ø446 will cause a skip. At any time, the "INS or EQ Ø7 H" gate reflects the color the scope is in, and can be sampled by the Ø447 instruction.

INSTALLATION AND ACCEPTANCE

1. Insure ECO's EM12-ØØ39, EM12-ØØØ51 and 12-ØØØ96 are installed.

2. Install red wires as per the hand wiring list on print D-CS-VC12-C-CoL.

3. Install the M7601 module into slot D36.

4. Adjust the delays at pin D36B1 for 1.6 MS (red to green) and .3MS (green to red). Use main DEC 12-D6BC or the sample program attached.

5. The VC12-C will be considered acceptable upon successful completion of mainDEC 12-D6BC.

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MASTER DRAWING LIST

DWG. NO.	REV. LET.	NO. OF SHEETS	TITLE
A-ML-EP12-0	REF	2	PROCESSOR
D-MU-EP12-0-1	REF	2	MODULE UTILIZATION PROC.
A-PL-EP12-0-1	REF	3	MODULE UTILIZATION PROC. (PL)
D-BS-KF12-0-CON	B	1	CONTROL GATING
D-BS-KF12-0-I01	B	1	IOT GENERATOR
D-BS-KF12-0-MAIN		1	MAINTENANCE
D-BS-KF12-0-MUX	D	1	MULTIPLEXER CONTROL
D-BS-KF12-0-MUX1		1	MUX API
D-BS-KF12-0-MUX2		1	MUX DEVICE 1
D-BS-KF12-0-PA1	A	1	PRIORITY LEVELS IN
D-BS-KF12-0-PA2		1	PRIORITY DECODING
D-BS-KF12-0-PTRS		1	STACK & VECTOR POINTERS
D-BS-KF12-0-PUSH		1	PUSH GATING
D-BS-KF12-0-RES	B	1	RESTORE GATING
D-BS-KF12-0-SSB		1	SAVE STATUS BITS
D-IC-KF12-0-CAB		1	BREAK DEVICE CABLE
D-FD-KF12-0-MRG	A	1	MAJOR REGISTER GATING
D-FD-KF12-0-FD	A	1	FLOW DIAGRAM
D-FD-KF12-0-FDBF		1	BLOCK FLOW
D-FD-KF12-0-FDVG		1	VECTOR GATING
A-SP-KF12-0-1	REF		ENGINEERING SPECIFICATIONS

REVISIONS			
REV.	DATE	CHG. NO.	APP'D.
A	0671	EP12-40	D.M.
B	8/71	EP12-42	R.M.
C	10/71	EP12-43	R.M.
D	1/72	EP12-~~44~~	R.M.
E	7/72	EP12-46	R.I.

DRN. E.WILSON	DATE 3/1/71	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D.	DATE 5-21-71	
ENG.	DATE 5-21-71	
PROJ/ENG.	DATE 5-21-71	
PROD. R Peterson	DATE 5/21/71	
FIRST USED ON PDP12		TITLE AUTOMATIC PRIORITY INTERRUPT
SCALE		SIZE A · CODE ML · NUMBER KF12-0 · REV. E
SHEET 1 OF 1		DIST.

DEC FORM NO. DRA 103

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CPTP TP2 H A1
CON PUSH (Ø) H B1
CON RESTORE (Ø) H C1
M135 PØ6 D1 S2
M611 R32 T2
CON CLOCK PRIORITIES H

SET OSC TO 5 MHz
K2 J2
M4Ø1 P28 M2 N2 R2 S2 T2 P2 E2 D2
CON CLOCK L
CON CLOCK H

CON PUSH (Ø) H A1
CON RESTORE (Ø) H B1
CPS FETCH (1) H C1
CPTP TP3 H D1
PA2 PRIORITY OK H D2
IOI API ON (1) H E2
+3V P29 VIH F2
M139 P29 H2 J2
CON INTERRUPT (1) L

CON CLOCK H H1
CON ADV (1) H J1
M133 PØØ K1 J1
M611 R32 K1
CON CLOCK PULSE L
CON CLOCK PULSE H

RCD SAVE PC (1) L H1
MPS INT INHIBIT (Ø) L J1
M112 R29 K1
CON NOT CPU CRIT H

CON BRK DONE (1) L F1
PUSH SKIP ENAB & L H1
RES DEC PT Ø L J1
IOI IO PRESET L K1
M627 R31 L1
M2Ø7 R34 CON ADV
CON CLOCK H D2
+3V R29 VIH E2
F2 H2 J2 K2 A1
+3V R31 VIH

CON SET PUSH H
CON INTERRUPT (1) L H1
IOI PJUMP (1) L J1
M133 R3Ø K1
M611 R32 U2 V2
CON SET PUSH L

MPS MEM EXT H
INS LIF L
P2
M133 P3Ø S2
R2
INS MSC H H2
INS LDF L
INS N EQ 6 H J2
M112 R29 L1 M1 N1
CON IF OR DF L
M133 R3Ø K2
CON DJR L

CON SET PUSH L H2
M2Ø5 R33 CON PUSH F2 D J2 K2 E2 C Ø J2 K2
IOI IO PRESET H
CON RESTORE (1) H A1
CON ENAB 6 H B1
M112 R29 C1 D2

IOI IOT RESTORE L
P2
M2Ø5 R33 CON RESTORE N2 R2 S2 M2 L2
IOI IO PRESET H
CON ENAB 6 L

*M9Ø6 P28
CON PUSH (1) H C1
CON RESTORE (1) H F1
INTERNAL GND

** NOTE
1. TRAILING EDGE OF API ADD ACC(1) L SETS BRK DONE FLOP.
* M9Ø6 INSTALLED IN P28 WHEN KF12 NOT INSTALLED.

+3V R31 VIH T2
M2Ø5 R33 CON BRK DONE S1 D U2 V2 C Ø P1
** MUXI API ADD ACC(1) L R1
CON CLOCK PULSE H D2
IOI IO PRESET H E2
M112 R29 F2
CON RESET BRK DONE L

L2 M2
M155 R36 DECODER
D-2⁴ C-2³ B-2¹ A-2⁰
L1 S1 R1 P1 N1 M1 T2 S2 R2 P2 N2 J2 H2 F2 E2 K2
CON ENAB Ø 1
CON ENAB 1 L
CON ENAB 2 L
CON ENAB 3 L
CON ENAB 4 L
CON ENAB 5 L
CON ENAB 6 L

E1 F1
M4Ø9 E3C 4 BIT UP/DOWN COUNTER
D2 E2 K1 J1 LD H1 CLR J1 H1 L2
QD QC QB QA DWN
F2 H2 L1 K1 J1 F1 K2
+3V R31 VIH
CON FETCH CLR H
CON CLOCK PULSE L
J2
K2

L1 M1 CON ENAB Ø H
K2 L2 CON ENAB 1 H
N1 P1 CON ENAB 2 H
R1 S1 CON ENAB 3 H
P2 R2 CON ENAB 4 H
V1 U1 CON ENAB 5 H
M611 R32

CON API BRK REQ (1) H K2
CON NOT CPU CRIT H L2
CON IF OR DF H M2
CON DJR H N2
M627 R31 P2
CON API REQ OK L

P1 R1 M133 PØ4 S1 CON ENAB 6 H

CON FETCH CLR L
CPS FETCH (1) H A1
CPT TS 3 (1) H B1
M133 R3Ø C1
M611 R32 H2 J2
CON FETCH CLR H

+3V R31 VIH K2
T2 M216 P31 CON API BRK REQ D I V1 V2 C Ø V2 U2
CON API BRK REQ L
CON PUSH (1) H D1
CON RESTORE (1) H E1
M112 R29 F1
M611 RØ7 K2 L2 S2
CON API BRK REQ H

CON ENAB 5 H K2
MUX I API ADD ACC (1) H L2
M121 P36
+3V P38 VI H M2
IOI IO PRESET H N2
P2
CON CLR BRK REQ L

REVISIONS			
REV	CHANGE NO	CHK	
A	EP12-0004A	MOORE	2-17-72
B	EP12-0004C	IKNAIAN	5-14-72

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP12		PARTS LIST		

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES
DECIMALS: .XXX = .005, .XX = .02, X = .1 | ANGLES: ±0° 30'
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY

DRN.	DATE	3-5-71
CHK'D.	DATE	
ENG.	DATE	
PROJ. ENG.	DATE	
PROD.	DATE	

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: CONTROL GATING

MATERIAL
FINISH
NEXT HIGHER ASSY. A-VL-KF12-Ø
SCALE
SHEET 1 OF 1

SIZE	CODE	NUMBER	REV.
D	BS	KF12-Ø-CON	B

DIST

DEC FORM NO. 9D 102-B

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IOO BMB Ø3 (1) H PD2
IOO BMB Ø4 (1) H PE2
IOO BMB Ø5 (1) H PF2
IOO BMB Ø6 (1) H PH2
IOO BMB Ø7 (1) H PJ2
IOO BMB Ø8 (1) H PK2
+3V PØ7 U1 H RD2
RE2
PD1 — IO1 DEV 77 H

IO1 IOT 5ξ 3ξ 4 H
IO1 IOT 5-7 L J2
IO1 IOT 3-7 L K2
IO1 IOT 4 L L2
M135 PØ6 — M2 N1
M611 PØ8 — P1 RF2
+3V PØ7 U1 — PV2
M7Ø7 PR12 — RP7 EXT AC CLEAR BUS L

IOO BIOP 1 H PM2
IOO BIOP 2 H PN2
IOO BIOP 4 H PP2
IOO BMB Ø9 (1) H PA1
IOO BMB 1Ø (1) H PB1
IOO BMB 11 (1) H PC1
M1Ø7 PR12 — RH2 IO7 RESTORE L
RJ2 IO1 IOT 2 L
RK2 IO1 IOT 3-7 L
RN2 IO1 IOT 3-2 L
RS2 IO1 IOT 4-4 L
RK2 IO1 IOT 5-7 L
RT2 IO1 IOT 5-4 L
RP2 IO1 IOT 6-2 L
RU2 IO1 IOT 6-4 L
RL2 IO1 IOT 7-7 L
RR2 IO1 IOT 7-2 L
RV2 IO1 IOT 7-4 L

IOO BMB Ø3 (1) H M1
IOO BMB Ø4 (1) H N1
IOO BMB Ø5 (1) H P1
IOO BMB Ø6 (1) H R1
IOO BMB Ø7 (1) H R2
IOO BMB Ø8 (Ø) H S2
INS IOT H T2
CPT IOT PAUSE (1) H U2
M139 P29 — V2 IO7 PUSH JUMP L

M611 PØ8
IO1 IOT 3-1 L D1 — E1 IO1 RFLD H
IO1 IOT 4-4 L F1 — H1 IO7 R STACK H
IO1 IOT 5-7 L E2 — F2 IO1 RVELTR H
IO1 IOT 2 L J1 — K1 IO1 IOT SET LEV H

PRE MB Ø9 (Ø) H D2
IOO BMB 1Ø (1) H E2
M133 PØ7 — F2 H1
PRF MB 11 (1) L J1
M133 PØ7 — K1

IOO BMB 1Ø (1) H D2
IOO BMB Ø9 (1) H E2
PRF MB 11 (Ø) H F2
IO1 PROC IOT H H2
M627 RØ2 — J2 IO1 API ON L

IOC PROC IOT L A1
M611 PØ8 — B1 IO1 PROC IOT H

H2
M133 PØ7 — K2 IO1 API OFF L
J2

IO1 IOT 7-1 L P1
IO1 API ON (Ø) L R1
M112 R29 — S1 L1
M611 PØ8 — M1 IO1 LD VECTOR L

IO1 IOT 6-2 L P2
IO1 API ON (Ø) L R2
M112 R29 — S2 K2
M611 PØ8 — L2 IO1 LD STACK L

IO1 IOT 2 L L2
IO1 API ON (Ø) L M2
M112 R29 — N2 L1
M133 PØ7 — M1 N1 IO1 LD STACK-VEC FLDL
IOO BAC Ø7 (1) H

IOC IO PRESET L U2
M611 PØ4 — V2 IO1 IO PRESET H
M611 PØ8 — P2 R2 IO1 IO PRESET L
M611 P37 — V1 U1 IO1 IO PRESET BUFL

IO1 API ON L D1
M205 R33 IO1 API ON — C1 I E1 F1 — Ø E1 F1
IO1 IO PRESET H B1
IO1 API OFF L A1

IO1 PUSH JUMP L
M205 R33 IO1 PJMP — K1 D I L1 M1 N1 — J1 C Ø N1 H1
CON CLR BRK REQ L

IO1 IOT 5ξ 3ξ 4 H
M734 PR13 — PD2 PE2 PF2 PH2 PJ2 PK2
IO1 RFLD H PM2
IO1 R STACK H PN2
IO1 RVECTR H PP2

PA1 IO1 EN WORD A H
PB1 IO1 EN WORD B H
PC1 IO1 EN WORD C H

PTRS STACK Ø0 (Ø) H PF1 — 0
PTRS STACK Ø1 (Ø) H PH1 — 1
PTRS STACK Ø2 (Ø) H PJ1 — 2
PTRS VELTOR Ø0 (Ø) H PK1 — 3
PTRS VELTOR Ø1 (Ø) H PL1 — 4
PTRS VELTOR Ø2 (Ø) H PM1 — 5
+3V PØ7U1H PN1 — 6
+3V PØ7U1H PP1 — 7
~ PA2 PRES LEV 3 H PR1 — 8
~ PA2 PRES LEV 2 H PS1 — 9
~ PA2 PRES LEV 1 H PU1 — 10
~ PA2 PRES LEV Ø H PV1 — 11
WORD A — M734 — I/O BUS

PTRS STACK Ø3 (Ø) H PD1 — 0
PTRS STACK Ø4 (Ø) H PE1 — 1
PTRS STACK Ø5 (Ø) H PR2 — 2
PTRS STACK Ø6 (Ø) H PS2 — 3
PTRS STACK Ø7 (Ø) H PT2 — 4
PTRS STACK Ø8 (Ø) H PU2 — 5
PTRS STACK Ø9 (Ø) H PV2 — 6
PTRS STACK 1Ø (Ø) H RD2 — 7
PTRS STACK 11 (Ø) H RE2 — 8
PTRS STACK 12 (Ø) H RF2 — 9
PTRS STACK 13 (Ø) H RU1 — 10
PTRS STACK 14 (Ø) H RV1 — 11
WORD B — M734 — I/O BUS

PTRS VECTOR Ø3 (Ø) H RH2 — 0
PTRS VECTOR Ø4 (Ø) H RJ2 — 1
PTRS VECTOR Ø5 (Ø) H RK2 — 2
PTRS VECTOR Ø6 (Ø) H RL2 — 3
PTRS VECTOR Ø7 (Ø) H RM2 — 4
PTRS VECTOR Ø8 (Ø) H RN2 — 5
PTRS VECTOR Ø9 (Ø) H RP2 — 6
~ PA1 LSB SEL H RR2 — 7
PA2 TRAIL 2 H RS2 — 8
PA2 TRAIL 1 H PT2 — 9
PA2 TRAIL Ø H RU2 — 10
+3V PØ7 U1 RV2 — 11
WORD C — M734 — I/O BUS

RA1 EXT I/O BUS ØØ L
RB1 EXT I/O BUS Ø1 L
RC1 EXT I/O BUS Ø2 L
RD1 EXT I/O BUS Ø3 L
RE1 EXT I/O BUS Ø4 L
RF1 EXT I/O BUS Ø5 L
RH1 EXT I/O BUS Ø6 L
RJ1 EXT I/O BUS Ø7 L
RK1 EXT I/O BUS Ø8 L
RL1 EXT I/O BUS Ø9 L
RM1 EXT I/O BUS 1Ø L
RN1 EXT I/O BUS 11 L

REVISIONS	REV
CHK CHANGE NO EP12-00044	A
MOORE 2-14-72	
EH12 00048	B
IKNAIAN	

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP12		PARTS LIST		

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES
DECIMALS .XXX = .005 .XX = .02 .X = .1 ANGLES ±0° 30'
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓
MATERIAL
FINISH

DRN. M. Greaves DATE 2-2-71
CHK'D DATE
ENG. DATE
PROJ. ENG. DATE
PROD. DATE

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: IOT GENERATOR

NEXT HIGHER ASSY. A-ML-KF12-Ø
SCALE
SHEET 1 OF 1

SIZE	CODE	NUMBER	REV.
D	BS	KF12-Ø-IO1	B

DIST.

DEC FORM NO DRD 102-B

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I00 BAC ØØ (1) H — A1, C1 — M1Ø1 R14 — B1 — MAIN SEL ØØ L

I00 BAC Ø1 (1) H — D1, C1 — M1Ø1 R14 — E1 — MAIN SEL Ø1 L

I00 BAC Ø2 (1) H — F1, C1 — M1Ø1 R14 — H1 — MAIN SEL Ø2 L

I00 BAC Ø3 (1) H — J1, C1 — M1Ø1 R14 — K1 — MAIN SEL Ø3 L

I00 BAC Ø4 (1) H — L1, C1 — M1Ø1 R14 — M1 — MAIN SEL Ø4 L

I00 BAC Ø5 (1) H — N1, C1 — M1Ø1 R14 — P1 — MAIN SEL Ø5 L

I00 BAC Ø6 (1) H — R1, C1 — M1Ø1 R14 — S1 — MAIN SEL Ø6 L

I00 BAC Ø7 (1) H — V1, C1 — M1Ø1 R14 — U1 — MAIN SEL Ø7 L

I00 BAC Ø8 (1) H — E2, C1 — M1Ø1 R14 — F2 — MAIN SEL Ø8 L

I00 BAC Ø9 (1) H — H2, C1 — M1Ø1 R14 — J2 — MAIN SEL Ø9 L

I00 BAC 1Ø (1) H — K2, C1 — M1Ø1 R14 — L2 — MAIN SEL 1Ø L

I00 BAC 11 (1) H — M2, C1 — M1Ø1 R14 — N2 — MAIN SEL 11 L
MAIN LD 1 H

I00 BAC Ø9 (1) H — A1, B1 — M133 P4Ø — C1 — MAIN SEL 12 L

I00 BAC 1Ø (1) H — D1, E1 — M133 P4Ø — F1 — MAIN SEL 13 L

I00 BAC 11 (1) H — D2, E2 — M133 P4Ø — F2 — MAIN SEL 14 L
MAIN LD 2 H

I00 BIOP 1 H — P2 — M1Ø3 RØ8 — B1, A1 — MAIN LD 1 L

I00 BIOP 2 H — R2 — M1Ø3 RØ8 — D1, C1 — MAIN LD 2 L

I00 BIOP 4 H — S2 — M1Ø3 RØ8 — F1, E1 — MAIN LD 4 L

I00 BMB Ø3 (Ø) H — D2
I00 BMB Ø4 (Ø) H — E2
I00 BMB Ø5 (Ø) H — F2
I00 BMB Ø6 (1) H — H2
I00 BMB Ø7 (Ø) H — J2
I00 BMB Ø8 (1) H — K2
L2
N2
+3V RØ8V1H
M1Ø3 RØ8 — V2 — MAINØ5 H
U2

~MAIN LD 1 H — H1, J1 — M133 P4Ø — K1 — MAIN LD1H
~CPTP TP4 H — H2, J2 — M133 P4Ø — K2

~MAIN LD 2 H — L1, M1 — M133 P4Ø — N1 — MAIN LD 2 H
~CPTP TP4 H — L2, M2 — M133 P4Ø — N2

REVISIONS | REV | CHANGE NO | CHK

FIRST USED ON OPTION/MODEL: PDP 12	QTY.	DESCRIPTION: PARTS LIST	PART NO.	ITEM NO.
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES. DECIMALS: XXX = .005, XX = .02, X = .1; ANGLES: ±0° 30'. REMOVE BURRS AND BREAK SHARP CORNERS. SURFACE QUALITY ✓	DRN. S. Wilson	DATE 2-23-71	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS	
	CHK'D	DATE	TITLE: MAINTENANCE	
	ENG.	DATE		
	PROJ. ENG.	DATE		
	PROD.	DATE		
MATERIAL	NEXT HIGHER ASSY. A-MI-KF12-C		SIZE D; CODE 83; NUMBER KF12-C-MAIN	REV.
FINISH	SCALE			
	SHEET 1 OF 1		DIST.	

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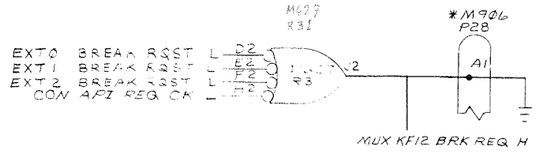

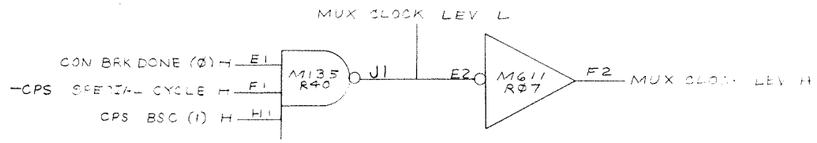

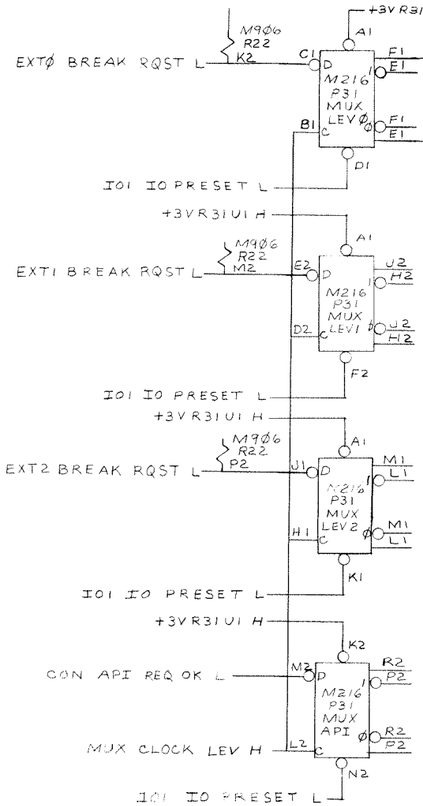

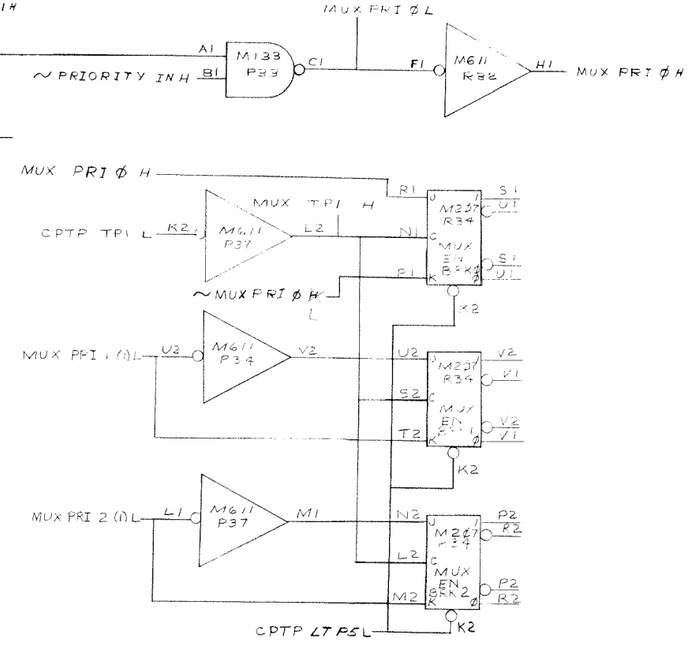

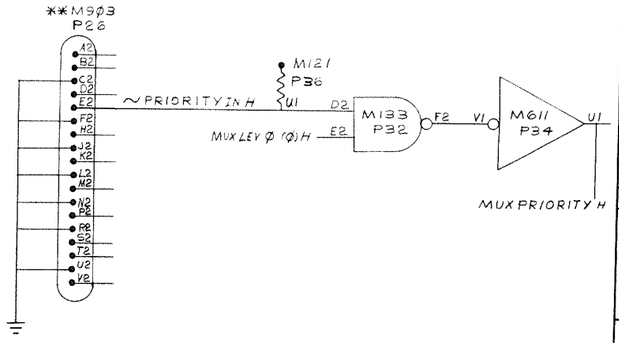

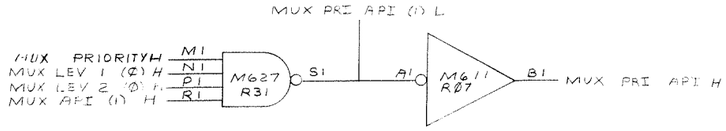

NOTE:
1. *M9Ø6 INSTALLED IN P28 WHEN KF12 NOT INSTALLED.
2. **CABLE FROM DMØ4.

REVISIONS	REV	CHK	
CHANGE NO EPI2-00040	A		6-22-71 MACKLIN
EPI2-00042	B		6-28-71 RMOORE
EPI2-00044	C		9-9-71 MOORE
EPI2-00046	D		2-14-72 IKNAIAN

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP 12		PARTS LIST		

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES
DECIMALS: .XXX = .005, .XX = .02, .X = .1 — ANGLES: ±0° 30'
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓
MATERIAL
FINISH

DRN. E Nelson	DATE 3-5-71	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
CHK'D. L Scala	DATE 3-5-71	
ENG. L Scala	DATE 3/5/71	TITLE MULTIPLEXER CONTROL
PROJ. ENG.	DATE 3/5/71	
PROD.	DATE 5/2/72	
NEXT HIGHER ASSY. A-NL-KF12-Ø	SIZE D	CODE 13S	NUMBER KF12-Ø-MUX	REV. D
SCALE		
SHEET OF	DIST	

DEC FORM NO DRD 102-B

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PTRS STACK ØØ (1) L — A1 — M623 P1Ø — D1 — EXT EXT DATA ADD Ø L
C1

PTRS STACK Ø2 (1) L — F1 — M623 P1Ø — K1 — EXT EXT DATA ADD 2 L
J1

PTRS STACK Ø4 (1) L — M1 — M623 P1Ø — R1 — EXT DATA ADD Ø1 L
P1

PTRS STACK Ø6 (1) L — D2 — M623 P1Ø — H2 — EXT DATA ADD Ø3 L
F2

MUX 1 ENABLE STACK ADD L

PTRS STACK Ø1 (1) L — B — M623 P1Ø — E1 — EXT EXT DATA ADD 1 L

PTRS STACK Ø3 (1) L — H1 — M623 P1Ø — L1 — EXT DATA ADD ØØ L

PTRS STACK Ø5 (1) L — N1 — M623 P1Ø — S1 — EXT DATA ADD Ø2 L

PTRS STACK Ø7 (1) L — E2 — M623 P1Ø — V2 — EXT DATA ADD Ø4 L

PTRS STACK Ø8 (1) L — K2 — M623 P1Ø — N2 — EXT DATA ADD Ø5 L
M2

PTRS STACK 1Ø (1) L — R2 — M623 P1Ø — U2 — EXT DATA ADD 07L
T2

PTRS STACK 12 (1) L — A1 — M623 P11 — D1 — EXT DATA ADD Ø9 L
C1

PTRS STACK 14(1) L — F1 — M623 P11 — K1 — EXT DATA ADD (11) L
J1

MUX 1 ENABLE STACK ADD L

PTRS STACK Ø9 (1) L — L2 — M623 P1Ø — P2 — EXT DATA ADD Ø6 L

PTRS STACK 11 (1) L — S2 — M623 P1Ø — V2 — EXT DATA ADD Ø8 L

PTRS STACK 13(1) L — B1 — M623 P11 — E1 — EXT DATA ADD 1Ø L

M623 P11 — H1 — L1

MUX 1 API DATA OUT L — M1 — M623 P11 — R1 — I00 DATA IN H
P1

I00 ADD ACCEPTED (1) L — D2 — M623 P11 — H2 — MUX 1 API ADD ACC (1) L
F2

S2 — M9Ø6 R22

N1 — M611 RØ7 — P1 — MUX 1 API ADD ACC (1) H

MUX PRI API L

PUSH CARRY INSERT L — N1 — M623 P11 — S1 — EXT INCREMENT MB L

I00 B BREAK (Ø) H — E2 — M623 P11 — J2 — MUX 1 API BREAK (1) L

T2 — M9Ø6 R22

N1 — M611 PØ4 — P1 — MUX 1 API BREAK (1) H

MUX 1 API DATA OUT H

CON RESTORE (1) L — D2 — M133 PØ3 — F2 — J1 — M611 RØ7 — K1 — MUX 1 API DATA OUT L
PUSH GET JUMP ADD L — E2

~ PUSH GET JUMP ADD L — T2 — M112 R29 — V2 — P2 — M611 P34 — R2 — MUX 1 ENABLE STACK ADD L
MUX PRI API (1) L — U2

REVISIONS	REV	CHANGE NO.	CHK

FIRST USED ON OPTION/MOD	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP 12		PARTS LIST		

UNLESS OTHERWISE SPECIFIED

UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINAL SURFACE QUALITY √
REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL

FINISH

DRN. M. Goiner	DATE 3-23-71	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
CHK'D.	DATE	
ENG.	DATE	
PROJ. ENG.	DATE	
PROD.	DATE 5/11/71	

NEXT HIGHER ASSY: A-ML-KF12-Ø

SCALE

SHEET 1 OF 1

TITLE: CHANNEL-MULTIPLEXER MUX-API

SIZE	CODE	NUMBER	REV
D	BS	KF12-Ø-MUX 1	

DIST.

DEC FORM NO DRD 102A

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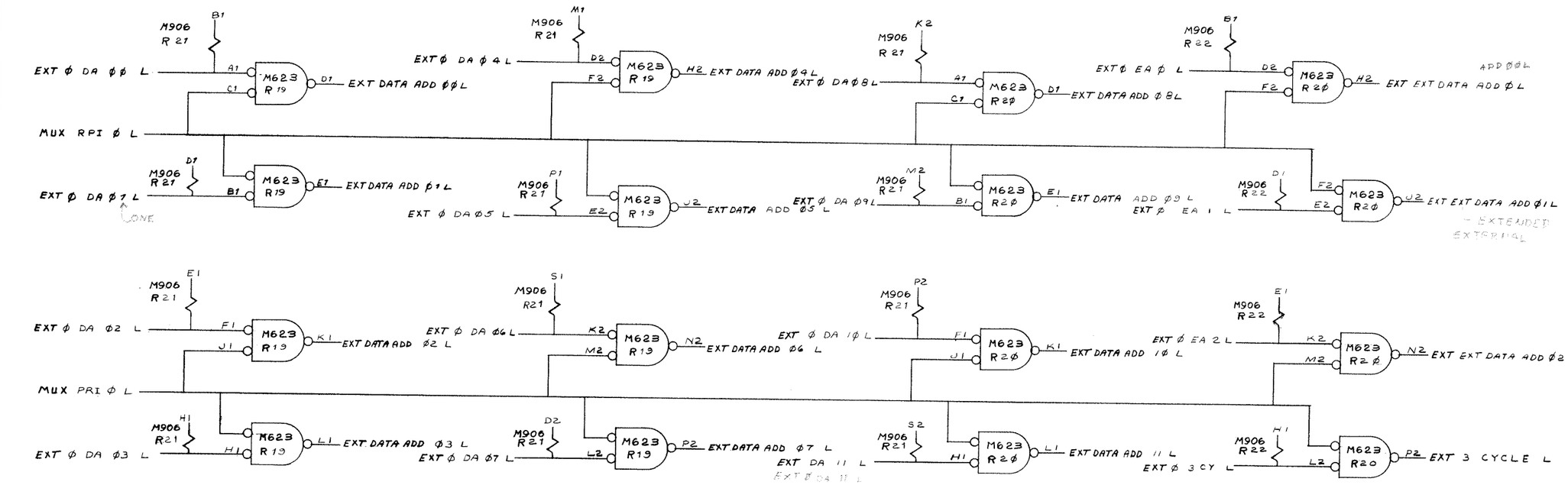

REVISIONS	REV.	CHANGE NO.	CHK

FIRST USED ON OPTION/MOD	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP12		PARTS LIST		

UNLESS OTHERWISE SPECIFIED
UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINAL SURFACE QUALITY
REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL

FINISH

DRN. M. Doiron	DATE 2-23-71	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. Ben Cain	DATE 3-11-71	
ENG. [illegible]	DATE 3-11-71	TITLE: CHANNEL-MULTIPLEXER
PROJ. ENG. Ben Cain	DATE 3-11-71	
PROD. [illegible]	DATE 3/11/71	
NEXT HIGHER ASSY: A-ML-KF12-Ø		SIZE D CODE BS NUMBER KF12-Ø-MUX2 REV
SCALE		DIST.
SHEET 1 OF 1		

DEC FORM NO. DRD 102A

SIZE D | CODE BS | NUMBER KF12-Ø-MUX2 | REV

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MAIN SEL ØØ L
EXT LEV Ø L
IOI IO PRESET BUF L
MAIN SEL Ø1 L
EXT LEV 1 L
IOI IO PRESET BUF L
MAIN SEL Ø2 L
EXT LEV 2 L
IOI IO PRESET BUF L
MAIN SEL Ø3 L
EXT LEV 3 L
IOI IO PRESET BUF L
MAIN SEL Ø4 L
EXT LEV 4 L
IOI IO PRESET BUF L
CON CLOCK PRIORITIES H

MAIN SEL Ø5 L
EXT LEV 5 L
MAIN SEL Ø6 L
EXT LEV 6 L
MAIN SEL Ø7 L
EXT LEV 7 L
MAIN SEL Ø8 L
EXT LEV 8 L
MAIN SEL Ø9 L
EXT LEV 9 L

MAIN SEL 1Ø L
EXT LEV 1Ø L
MAIN SEL 11 L
EXT LEV 11 L
MAIN SEL 12 L
EXT LEV 12 L
MAIN SEL 13 L
EXT LEV 13 L
MAIN SEL 14 L
EXT LEV 14 L

EXT INT RQST BUS 1 L
EXT INT RQST BUS 2 L
EXT INT RQST BUS 3 L
EXT INT RQST BUS 4 L
EXT INT RQST BUS 5 L
EXT INT RQST BUS 6 L
EXT INT RQST BUS L
PAI LS LEV INT L
EXT INT RQST BUS L (THIS SIGNAL IS EFFECTIVE ONLY WHEN THE KF12 IS NOT SELECTED)

PAI LSB SEL L
PAI LSB BIT 2 L
PAI LSB BIT 1 L
PAI LSB BIT Ø L

PAI MSB BIT 2 L
PAI MSB BIT 1 L
PAI MSB BIT Ø L
PAI TRIAL B L

M192 "ENCODER" CHARACTERISTICS:
1. "E OUT" IS LOW WHEN ALL INPUTS ARE HIGH.
2. WHEN "E IN" IS HIGH ALL OUTPUTS ARE HIGH.

M905 R16

PWF PWR LOW (1) L
LIP TAPE INTERRUPT L
CLIO INT RQST L
TSS INT RQST L
TTO TPR FLG (1) L
TTI KEYBOARD FLAG (1) L
DTTI KEYBOARD FLAG (1) L
DTTO TPR FLG (1) L
PCL INT RQST L
EXT INT RQST BUS 1 L
EXT INT RQST BUS 2 L
EXT INT RQST BUS 3 L
EXT INT RQST BUS 4 L
EXT INT RQST BUS 5 L
EXT INT RQST BUS 6 L
EXT LEV Ø L
EXT LEV 1 L
EXT LEV 2 L
EXT LEV 3 L
EXT LEV 4 L
EXT LEV 5 L
EXT LEV 6 L
EXT LEV 7 L
EXT LEV 8 L
EXT LEV 9 L
EXT LEV 11 L
EXT LEV 12 L
EXT LEV 13 L
EXT LEV 14 L

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP 12		PARTS LIST		

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES
DECIMALS: .XXX = .005, .XX = .02, .X = .1 — ANGLES: ±0° 30'
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓
MATERIAL
FINISH

DRN. E. Nilsson DATE 2-25-71
CHK'D. DATE
ENG. DATE
PROJ. ENG. DATE
PROD. DATE

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: PRIORITY LEVELS IN

NEXT HIGHER ASSY. A-ML-KF12-0
SCALE
SHEET / OF /

SIZE D | CODE BS | NUMBER KF12-Ø-PAI | REV. A | DIST.

INV. A — 1 — 000440 — MACKLIN — 6-25-71 — 6-25-71

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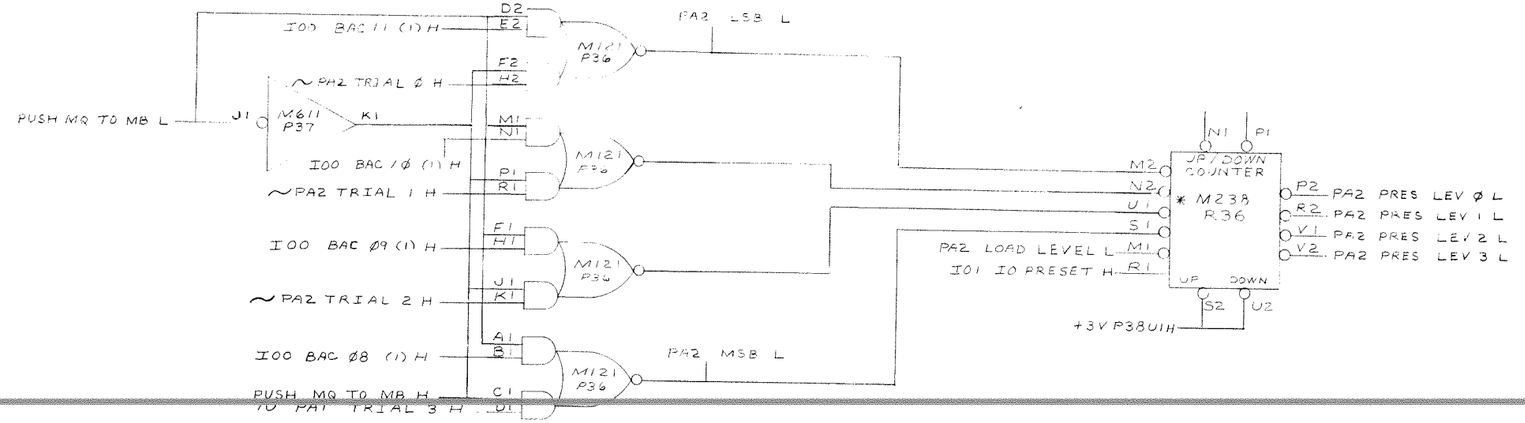

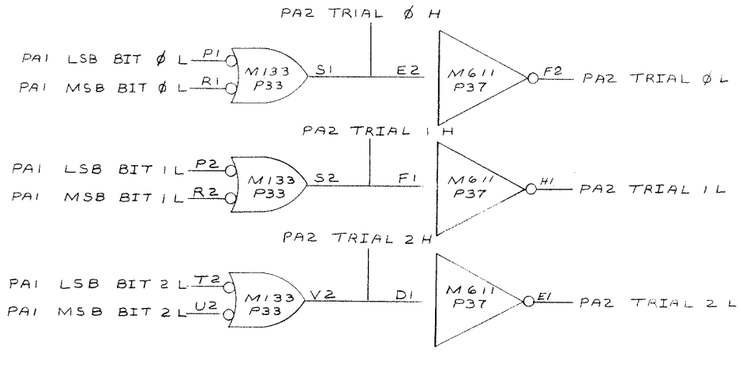

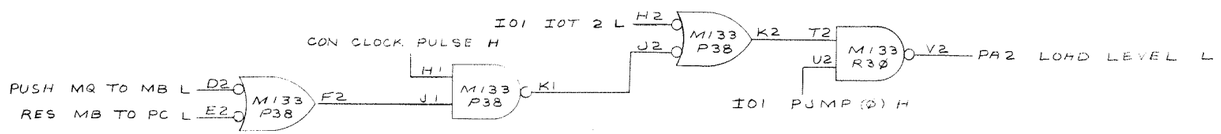

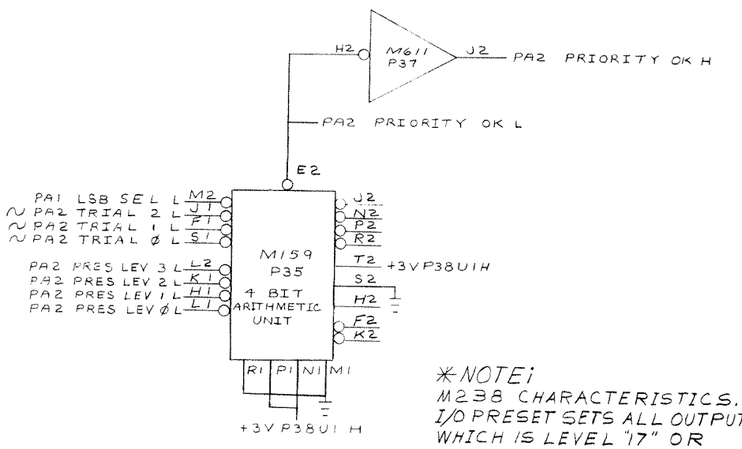

*NOTE:
M238 CHARACTERISTICS.
I/O PRESET SETS ALL OUTPUTS LOW WHICH IS LEVEL "1" OR MACHINE LEVEL.

REVISIONS		
REV	CHANGE NO	CHK

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP 12		PARTS LIST		

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES	DRN. E Wilson	DATE 3-9-71
DECIMALS: .XXX ± .005, .XX ± .02, .X ± .1 — ANGLES: ±0° 30'	CHK'D.	DATE
	ENG.	DATE
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓	PROJ. ENG.	DATE
	PROD.	DATE 3/24/72
MATERIAL	NEXT HIGHER ASSY. A-ML-KF12-0	
FINISH	SCALE	
	SHEET / OF /	DIST.

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: PRIORTY DECODING

SIZE	CODE	NUMBER	REV.
D	BS	KF12-0-PA2	

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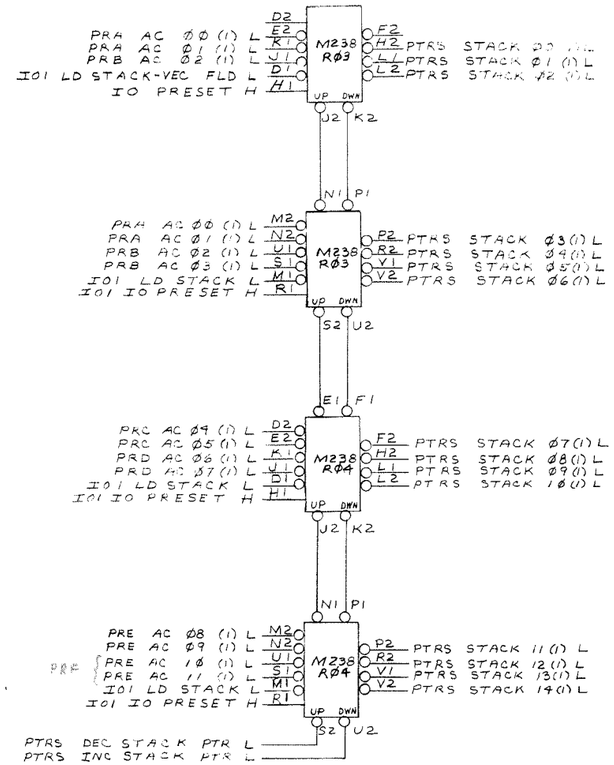

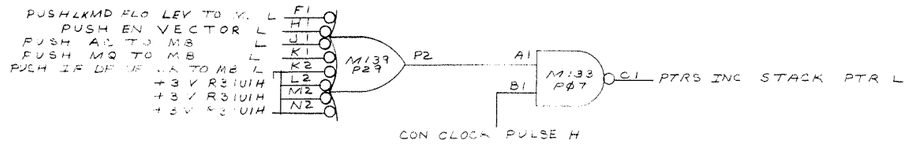

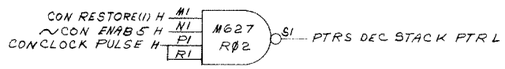

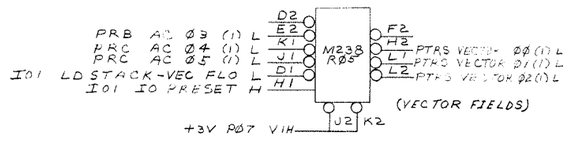

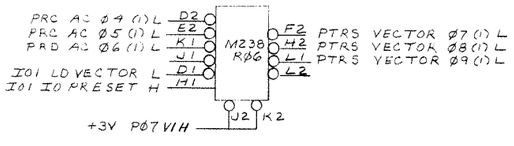

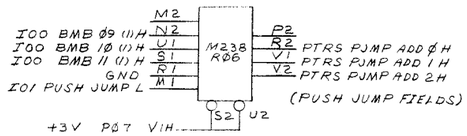

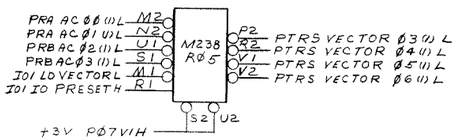

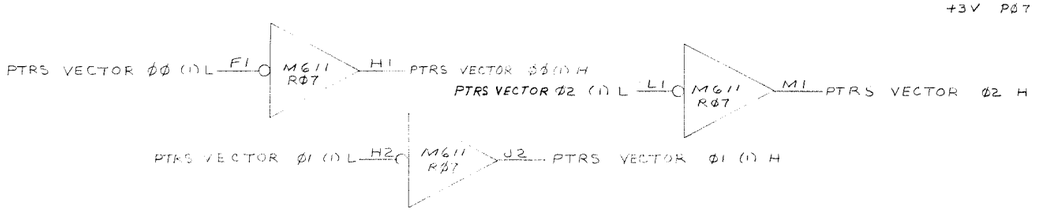

REVISIONS	REV	CHANGE NO.	CHK

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP 12		PARTS LIST		

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES	DRN. E. Wilson	DATE 2-24-71	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
	CHK'D.	DATE 3-11-71	
DECIMALS .XXX = .005 .XX = .02 .X = .1 / ANGLES ±0° 30'	ENG.	DATE	TITLE STACK & VECTOR POINTERS
	PROJ. ENG.	DATE	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓	PROD.	DATE 3/31/71	
MATERIAL	NEXT HIGHER ASSY. A-ML-KF12-0		SIZE D / CODE BS / NUMBER KF12-0-PTRS / REV.
FINISH	SCALE		
	SHEET 1 OF 1		DIST

DEC FORM NO. DRD 102-B

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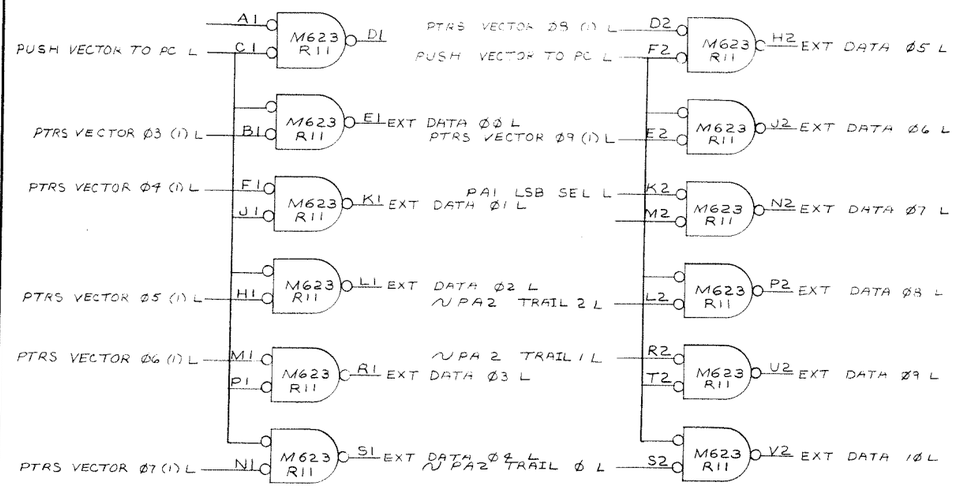

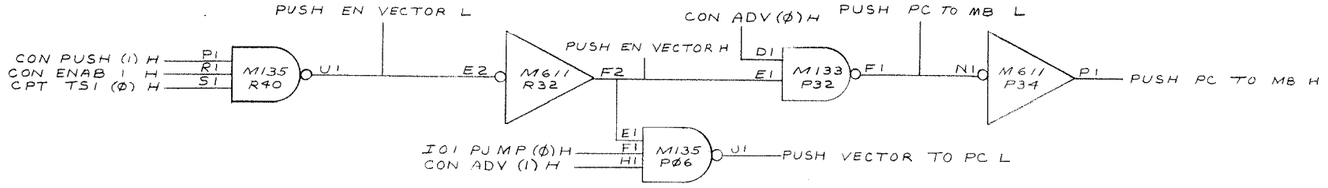

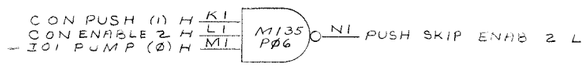

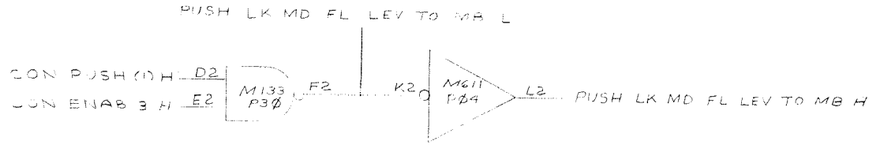

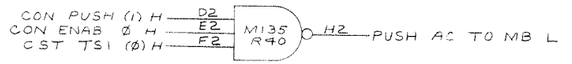

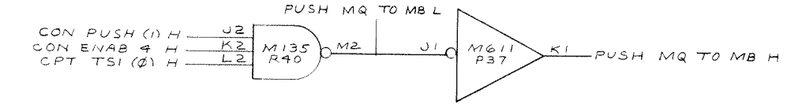

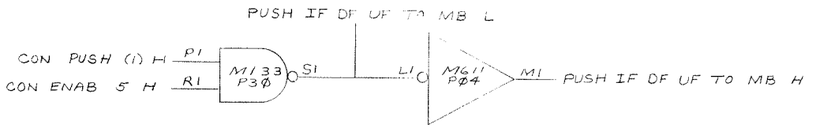

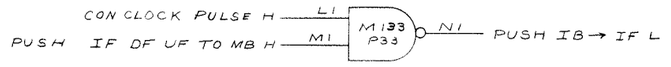

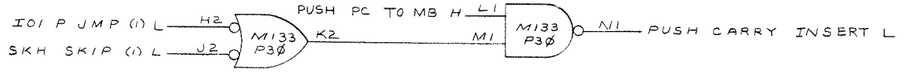

FIRST USED ON OPTION MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP 12		PARTS LIST		

UNLESS OTHERWISE SPECIFIED
UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINAL SURFACE QUALITY √
REMOVE BURRS AND BREAK SHARP CORNERS
MATERIAL
FINISH

DRN. E Wilson	DATE 3-2-71	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
CHK'D.	DATE	
ENG.	DATE	
PROJ. ENG.	DATE	
PROD.	DATE	

NEXT HIGHER ASSY
A-M1-KF12-0

TITLE
PUSH GATING

SIZE	CODE	NUMBER	REV.
D	BS	KF12-0-PUSH	

SCALE
SHEET OF
DIST.

REV	CHANGE NO	SIGNATURE

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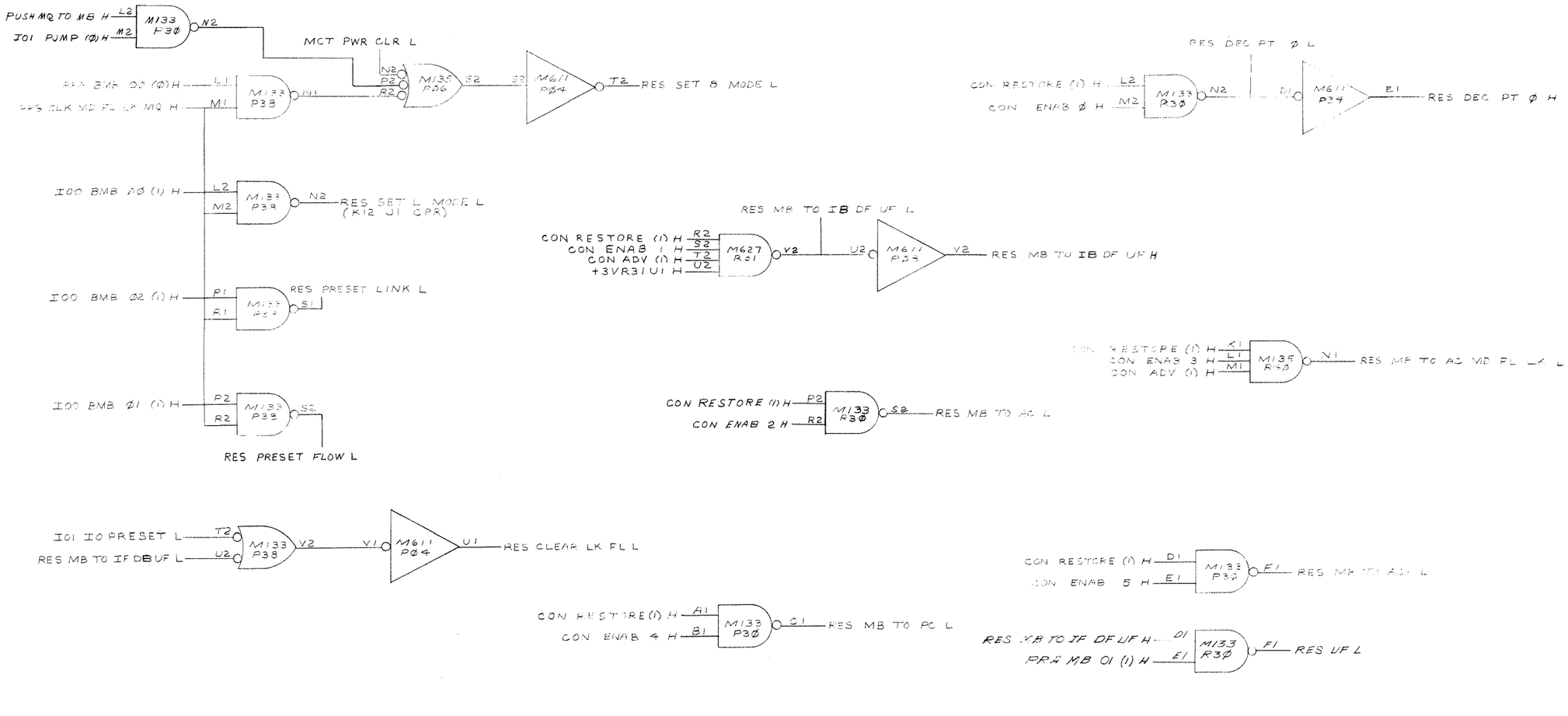

REVISIONS			
CHK	CHANGE NO.	REV.	
	EP12-00344	A	
	EP12-00346	B	

MOORE
IKNAIAN

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP 12		PARTS LIST		

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES

DECIMALS	ANGLES
.XXX = .005 .XX = .02 .X = .1	±0° 30'

REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓

MATERIAL

FINISH

DRN.		DATE 3-4-71
CHK'D.		DATE 3-4-71
ENG.		DATE 3-24-71
PROJ. ENG.		DATE 3-24-71
PROD.		DATE 3-24-71

NEXT HIGHER ASSY.

SCALE

SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: RESTORE GATING

SIZE	CODE	NUMBER	REV.
D	BS	KF12-0-RES	B

DIST.

NEXT COMP D BS KF12-0-RES REV B

SEC FORM NO 1061 102-B

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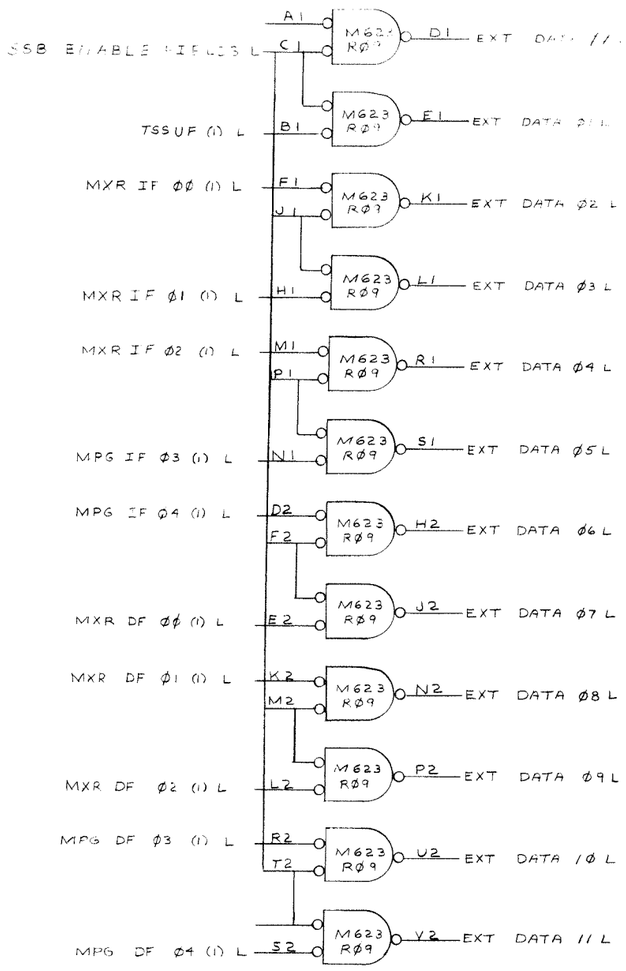

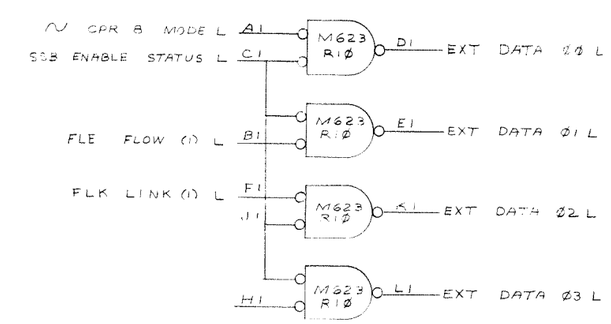

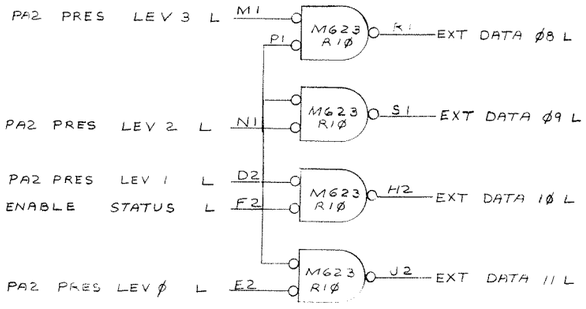

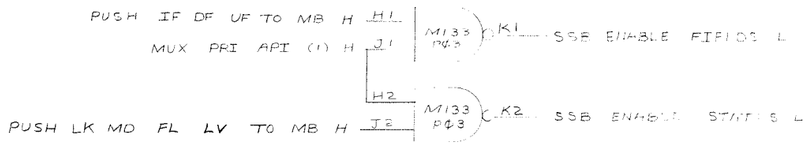

FIRST USED ON OPTION/MODEL: PDP 12	QTY.	DESCRIPTION	PART NO. / ITEM NO.
		PARTS LIST	
UNLESS OTHERWISE SPECIFIED: DIMENSION IN INCHES; TOLERANCES: DECIMALS ± .005, FRACTIONS ± 1/64, ANGLES ± 0°30'; FINAL SURFACE QUALITY; REMOVE BURRS AND BREAK SHARP CORNERS	DRN E. Wilson	DATE 2-22-71	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
	CHK'D	DATE	TITLE: SAVE STATUS BITS
	ENG.	DATE	
	PROJ. ENG.	DATE	
MATERIAL	PROD.	DATE 3/24/71	NEXT HIGHER ASSY: A-ML-KF12-0
FINISH	SCALE		SIZE D CODE BS NUMBER KF12-0-SSB REV.
	SHEET OF		DIST.

REVISIONS: REV. | CHANGE NO | CHK

DEC FORM NO DRD 102A

SIZE D CODE BS NUMBER KF12-0-SSB REV.

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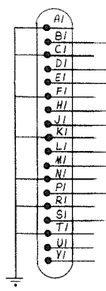
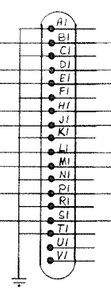
P14 - P19 [illegible]

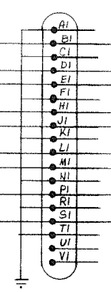
M9Ø3 P14



M9Ø3 P15



M9Ø3 P16



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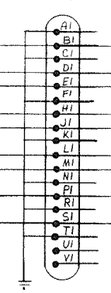
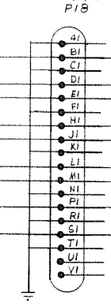
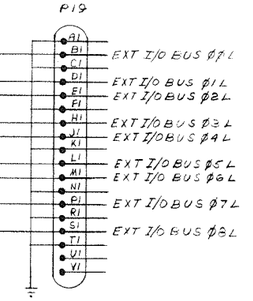


M9Ø3 P18

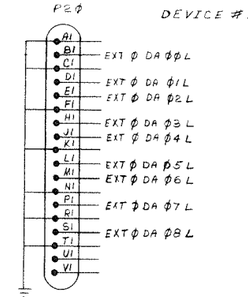


M9Ø3 P19

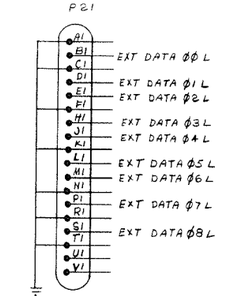


M9Ø3 P2Ø

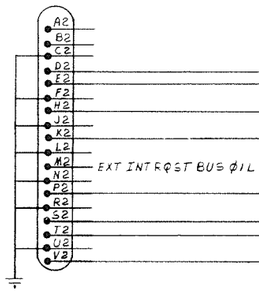
DEVICE #1



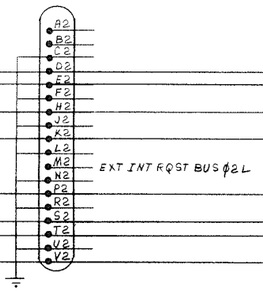
M9Ø3 P21



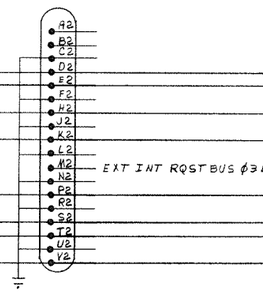
M9Ø3 P14



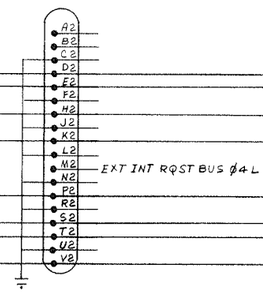
M9Ø3 P15



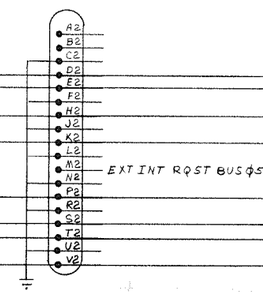
M9Ø3 P16



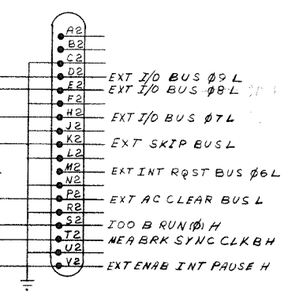
M9Ø3 P17



M9Ø3 P18

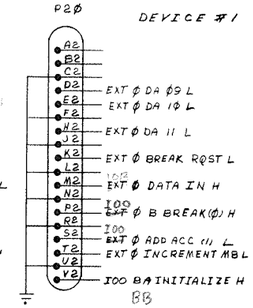


M9Ø3 P19

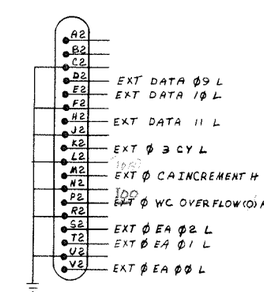


M9Ø3 P2Ø

DEVICE #1

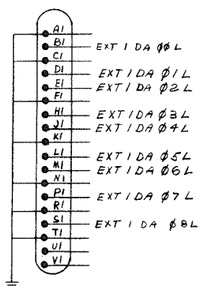


M9Ø3 P21

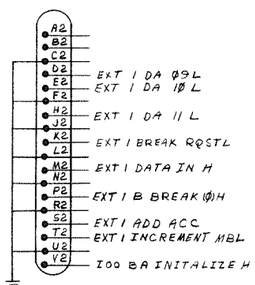


M9Ø3 P22

DEVICE #2

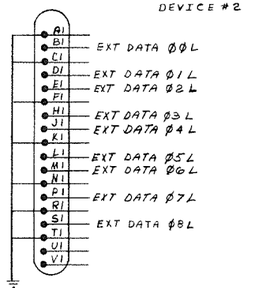


M9Ø3 P22

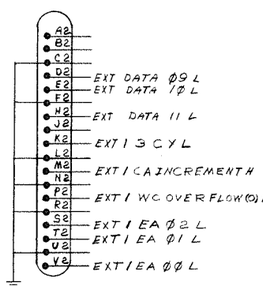


M9Ø3 P23

DEVICE #2

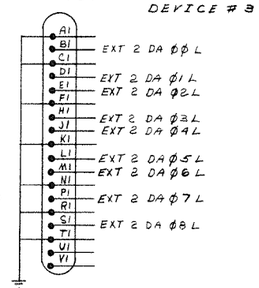


M9Ø3 P23

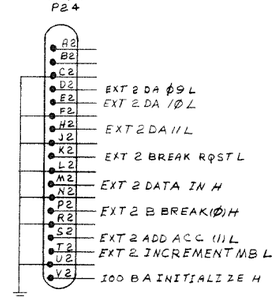


M9Ø4 P24

DEVICE #3

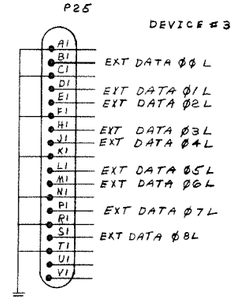


M9Ø4 P24

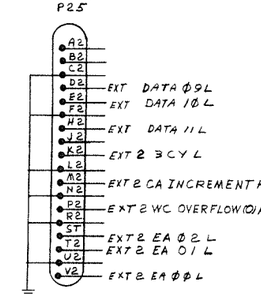


M9Ø3 P25

DEVICE #3



M9Ø3 P25



P20 - P25 [illegible]

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP12		PARTS LIST		

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES

DECIMALS	ANGLES
XXX = .005 XX = .02 X = .1	±0° 30'

REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓

MATERIAL

FINISH

DRN. M-Dorius	DATE 3-9-71	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
CHK'D.	DATE	
ENG.	DATE	
PROJ. ENG.	DATE	
PROD.	DATE 3/12	

TITLE: BREAK DEVICE CABLES

NEXT HIGHER ASSY.: A-ML-KF12-Ø

SCALE

SHEET 1 OF 1

SIZE	CODE	NUMBER	REV.
D	IC	KF12-0-CAB	

DIST.

REVISIONS: LTR | DESCRIPTION | DATE | APPROVED

SIZE D | CODE BSKF12-Ø-BDC | NUMBER | REV

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INCR STACK
(PUSH + PUSH JUMP)

STACK POINTER
15 BITS

IOT 6772 (SMLV)
$AC_{0-2} \rightarrow STACK_{0-2}$

IOT 6776 (SSTK)
$AC_{0-11} \rightarrow STACK_{3-14}$

MA

API REQ BRK * BRK GRANTED

DECR STACK
(RESTORE)

MB

MEMORY
(UP TO 32K)

REST * ENAB 1

UF | IF (5) | DF (5)

PUSH + PUSHJ
* ENAB 5

REST * ENAB 3

REST * ENAB 4

MD | * PC | FLO | LK

PUSH + PUSHJ
* ENAB 1

PUSH + PUSHJ
* ENAB 3

REST * ENAB 5
REST * ENAB 2

AC

PUSH + PUSHJ
* ENAB 0
PUSH + PUSHJ
* ENAB 4

REST * ENAB 2

MQ

PUSH + PUSHJ
* ENAB 4

MB

* NOTE:
FOR PUSH AND PUSH J,
MB + SKIP → MB;
THE SKIP FLIP-FLOP IS NOT
REQUIRED TO BE RESTORED.

PUSH + PUSHJ

P	AC
P+1	PC + SKIP
P+2	MD, FL, LK
P+3	MQ
P+4	UF, IF, DF
(P)	

"STACK"

RESTORE

REVISIONS	REV
CHK	
CHANGE NO	A
E17-30946	
IKNAIAN	
5/11/72	

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP12		PARTS LIST		

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES

DECIMALS	ANGLES
.XXX = .005 .XX = .02 .X = .1	±0° 30'

REMOVE BURRS AND BREAK SHARP CORNERS. SURFACE QUALITY ✓

MATERIAL —

FINISH —

DRN.	M LONG	DATE 5/16/72
CHK'D		DATE
ENG.		DATE
PROJ. ENG.		DATE
PROD.		DATE

NEXT HIGHER ASSY. A-ML-KF12-O

SCALE

SHEET OF

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
MAJOR
REGISTER-GATING

SIZE	CODE	NUMBER	REV.
D	FD	KF12-O-MRG	A

DIST.

DEC FORM NO
1083 102-B

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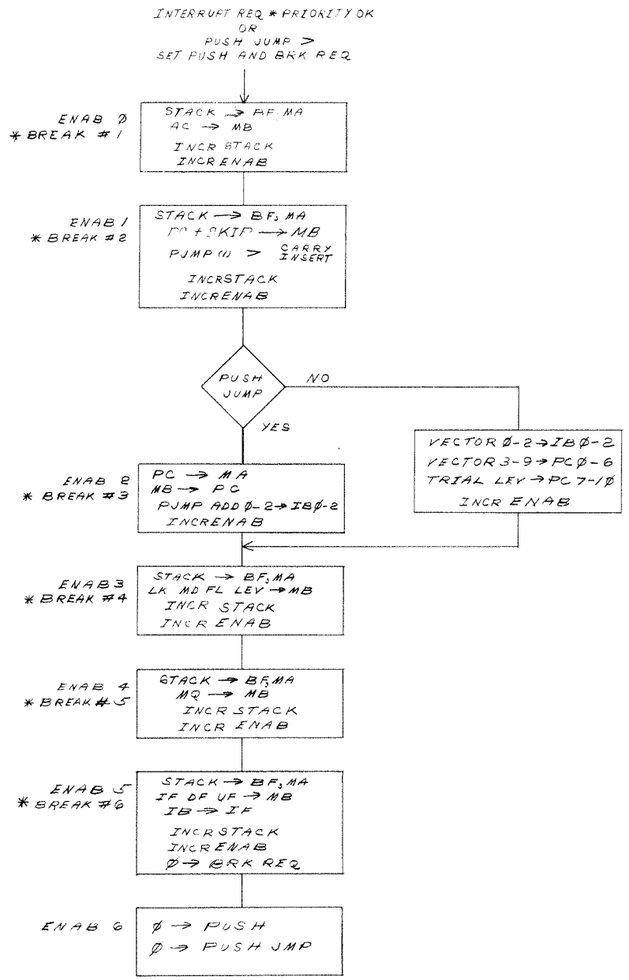
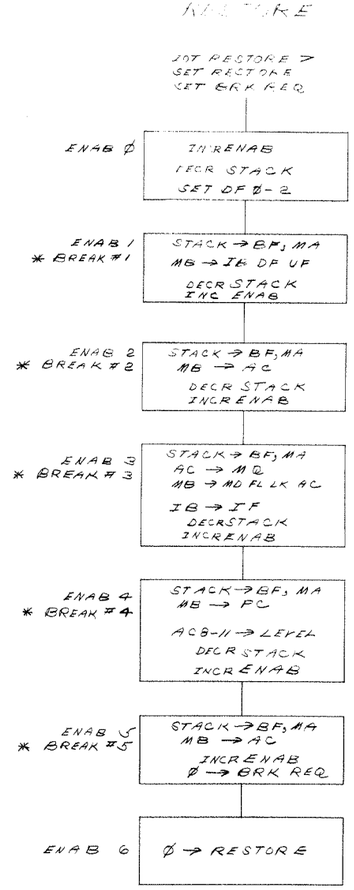
PUSH



RESTORE



* NOTE
1. THE KF12 HAS LOWEST PRIORITY ON THE BUS. BREAK REQUESTS FROM OTHER DEVICES WILL BE ACKNOWLEDGED DURING A PUSH OR RESTORE.

REVISIONS			
REV	CHANGE NO.	CHK	
A	EP12-00046	RH	Initial Release
	IKNAIAN		8-14-72

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP 12	PARTS LIST			

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES

DECIMALS	ANGLES
.XXX = .005 .XX = .02 .X = .1	± 0° 30'

REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓

MATERIAL —

FINISH

DRN.	M. Quinn	DATE 3-22-72
CHK'D.	[illegible]	DATE [illegible]
ENG.	[illegible]	DATE [illegible]
PROJ. ENG.	[illegible]	DATE [illegible]
PROD.	[illegible]	DATE [illegible]

NEXT HIGHER ASSY. A-ML-KF12-Ø

SCALE NONE

SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: FLOW-DIAGRAM

SIZE	CODE	NUMBER	REV.
D	FD	KF12-Ø-FD	A

DIST.

DEC FORM NO. DRD 102-B

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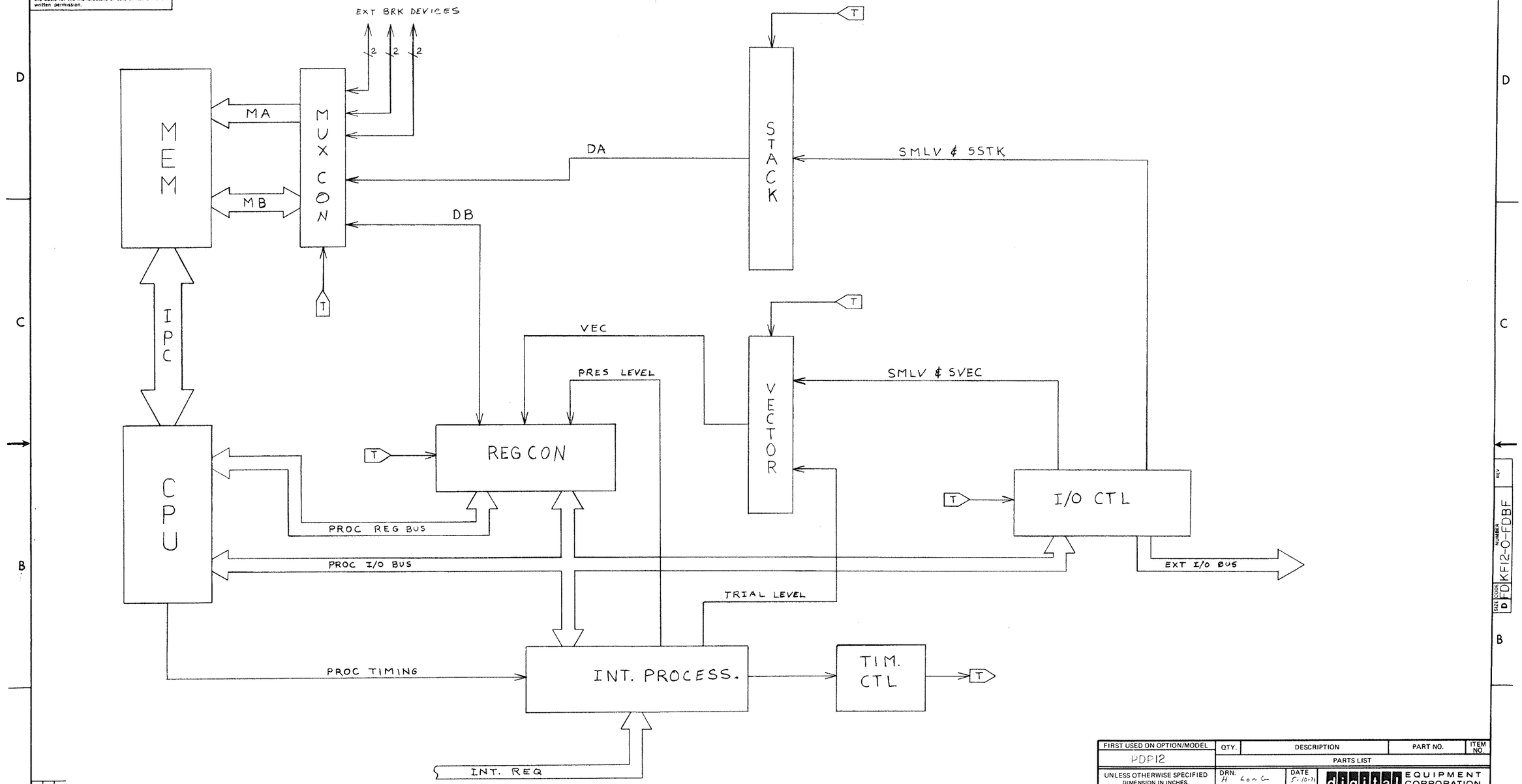

FIRST USED ON OPTION/MODEL: PDP12	QTY.	DESCRIPTION	PART NO.	ITEM NO.
		PARTS LIST		

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES
DECIMALS: .XXX = .005, .XX = .02, .X = .1 — ANGLES: ±0° 30'
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓
MATERIAL
FINISH

DRN. H Lenchner	DATE 5/10/71	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
CHK'D. Jon Cann	DATE 5/21/71	
ENG. Jon Cann	DATE 5/21/71	TITLE: BLOCK FLOW
PROJ. ENG. Jon Cann	DATE 5/21/71	
PROD. [illegible]	DATE 6/21/71	

NEXT HIGHER ASSY.: A-ML-KF12-0
SCALE:
SHEET / OF /

SIZE	CODE	NUMBER	REV.
D	FD	KF12-0-FDBF	

DIST.

REVISIONS: REV. | CHANGE NO. | CHK

DEC FORM NO DRD 102-B

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IOT 6772 (SMLV)

$AC_{3-5} \rightarrow VEC_{\emptyset-2}$

IOT 6777 (SVEC)

$AC_{\emptyset-6} \rightarrow VEC_{3-9}$

1 OF 15 INTERRUPTS

15

D 1 F/F C Ø

CLOCK

15

VEC Ø 1 2 3 4 5 6 7 8 9

TRIAL Ø 1 2 3

NOTE: INTERRUPT REQUEST IS NOT GRANTED UNLESS TRIAL LEVEL (VALUE) IS LESS THAN PRESENT LEVEL.

PUSH * ~ PUSHJ

~ PUSHJ * PUSH * ENAB 1

~ PUSHJ * PUSH * ENAB 1

Ø

IF Ø 1 2 3 4

PC Ø 1 2 3 4 5 6 7 8 9 10 11

PUSH * ENAB 5

PUSH * PUSHJ * ENAB 2 (CONTAINS VECTOR ADDRESS)

IB Ø 1 2

MB Ø 1 2 3 4 5 6 7 8 9 10 11

PUSHJ

9 10 11 IR

PUSHJ MB→PC IS ACTUALLY LOADED VIA:

PC→MA

MEM→MB

MB→PC

REVISIONS	REV	CHANGE NO	CHK

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP12		PARTS LIST		

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES

DECIMALS	ANGLES
.XXX = .005 .XX = .02 .X = .1	±0° 30'

REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓

MATERIAL

FINISH

DRN. H Lorenz	DATE 10/11	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
CHK'D	DATE 2-7-71	
ENG.	DATE 2/27/71	
PROJ. ENG.	DATE 2-27-71	
PROD.	DATE	

TITLE: VECTOR GATING

NEXT HIGHER ASSY. A-ML-KF12-0

SCALE

SHEET / OF /

SIZE	CODE	NUMBER	REV.
D	FD	KF12-Ø-FDVG	

DIST.

FORM NO 102-B

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MASTER DRAWING LIST

DWG. NO.	REV. LET.	NO. OF SHEETS	TITLE
~~A-PL-DM12-0-0~~		~~1~~	~~3 CHANNEL DATA BREAK MUX~~
D-BS-DM12-0-MUX3		1	MUX DEVICE 2
D-BS-DM12-0-MUX4		1	MUX DEVICE 3
A-SP-DM12-0-1	REF		ENGINEERING SPECIFICATIONS
A-ML-EP12-0	REF	2	PROCESSOR
D-MU-EP12-0-1	REF	2	MODULE UTILIZATION PROC.
A-PL-EP12-0-1	REF	3	MODULE UTILIZATION PROC. (PL)

REVISIONS			
REV.	DATE	CHG. NO.	APP'D.
A	10/71	EP12-43	R.M.
B	1/71	EP12-44	R.M.

DRN.	DATE	5-20-71
CHK'D	DATE	
ENG.	DATE	
PROJ. ENG.	DATE	5-21-71
PROD. R Peterson	DATE	5/21/71
FIRST USED ON	KF12	
SCALE		
SHEET	1 OF 1	

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
3 CHANNEL
DATA BREAK MUX

SIZE	CODE	NUMBER	REV.
A	ML	DM12-0	B

DIST.

DEC FORM NO.16-1033
DRA 103

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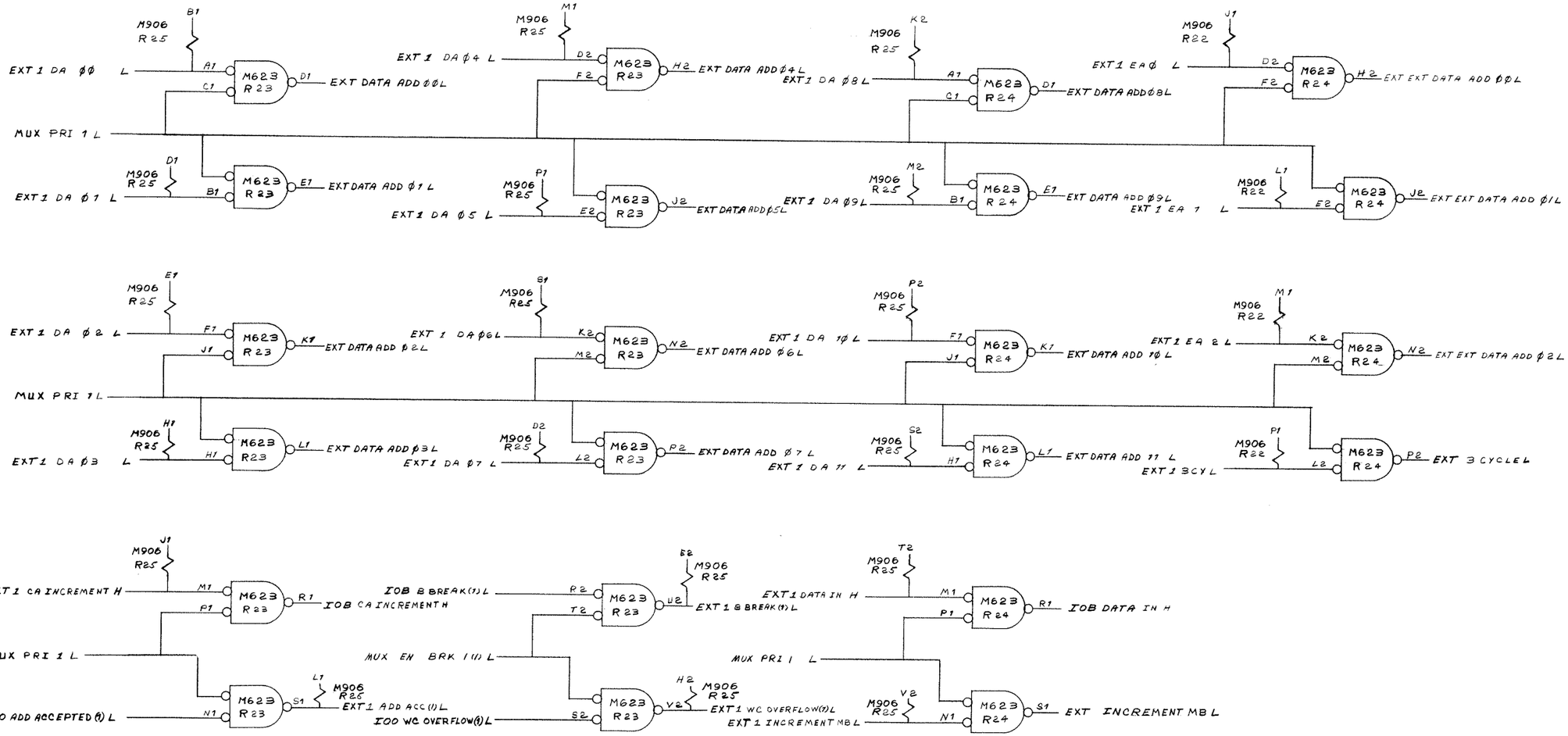

REVISIONS		
REV	CHANGE NO.	CHK

DEC FORM NO. DRD 102A

FIRST USED ON OPTION/MOD	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP12		PARTS LIST		

UNLESS OTHERWISE SPECIFIED
UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINAL SURFACE QUALITY
REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL

FINISH

DRN. M. Quinn	DATE 2-23-71	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CH'K'D. Lee Cam	DATE 3-31-71	
ENG. Lee Cam	DATE 3-31-71	TITLE: MUX DEVICE 2
PROJ. ENG. Lee Cam	DATE 3-31-71	
PROD. R Peter	DATE 5/21/71	

NEXT HIGHER ASSY: A-ML-KF12-Ø

SIZE D | CODE BS | NUMBER DM12-Ø-MUX3 | REV

SCALE

SHEET 1 OF 1

DIST.

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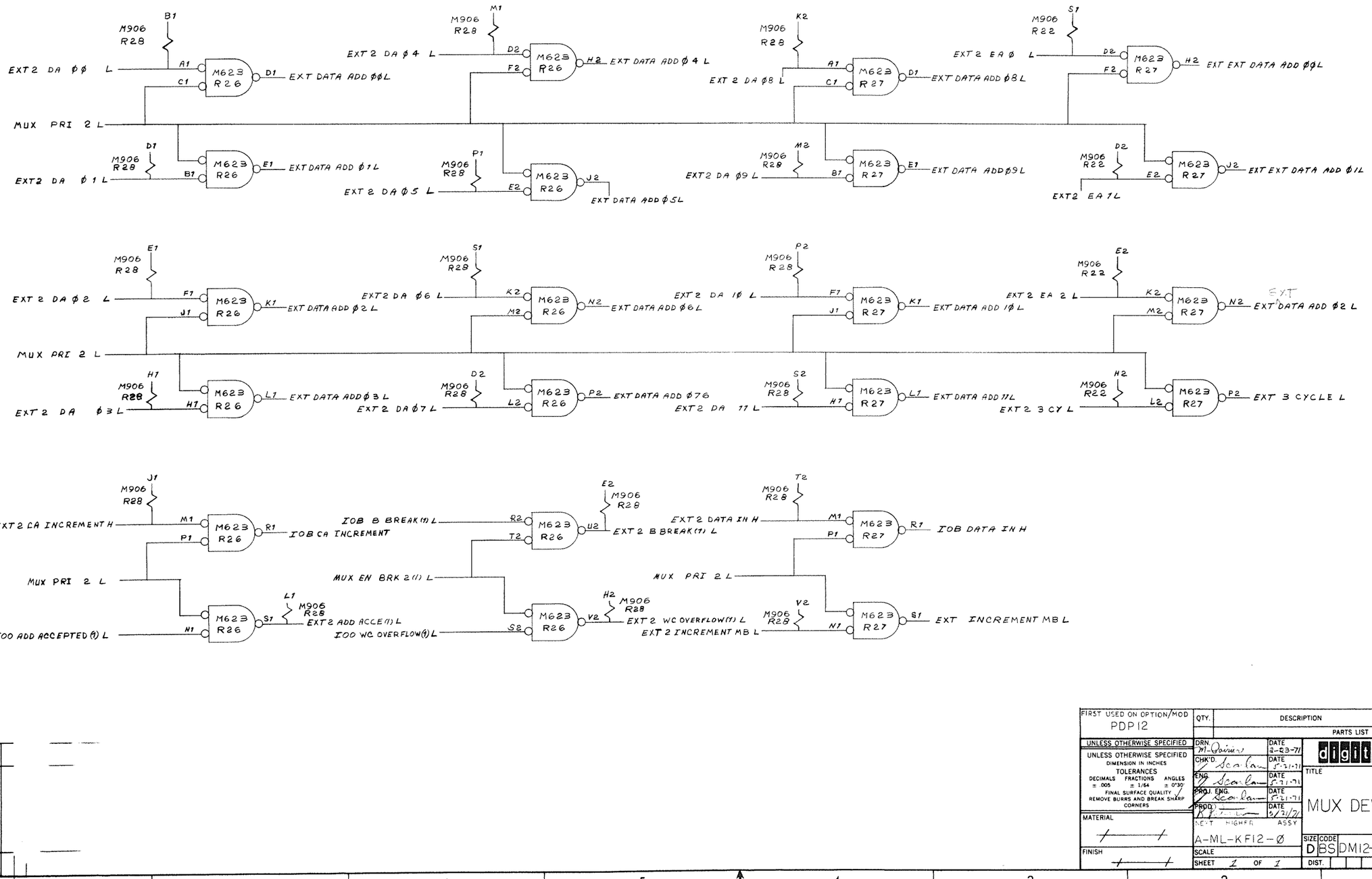

REVISIONS	REV.	CHANGE NO.	CHK

FIRST USED ON OPTION/MOD	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP12		PARTS LIST		

UNLESS OTHERWISE SPECIFIED
UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINAL SURFACE QUALITY √
REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL
FINISH

DRN. M. Quinn	DATE 8-23-71	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
CHK'D. Scanlan	DATE 8-31-71	
ENG. Scanlan	DATE 8-31-71	TITLE: MUX DEVICE 3
PROJ. ENG. Scanlan	DATE 8-31-71	
PROD. K F [illegible] NEXT HIGHER ASSY	DATE 9/21/71	A-ML-KF12-Ø
SCALE		SIZE D CODE BS NUMBER DM12-Ø-MUX4 REV
SHEET 1 OF 1		DIST.

SIZE D CODE BS NUMBER DM12-Ø-MUX4 REV

DEC FORM NO. TD 102A

MASTER DRAWING LIST

MAINTENANCE MANUALS NO.	TITLE	UNIT VARIATIONS KE12-0
KE12-0	ARITHMETIC OPERATION	X

USED ON OPTIONS							

REVISIONS REV.	DATE	CHG. NO.	APP'D.
A	3-18-69	EP12-01	JS
B	6-5-69	EP12-04	LG
C	10-70	EP12-30	LG
D	7/71	MISC-86	A.V.
E	1/72	EP12-44	R.M.

DRN. J. APREA	DATE 3-7-69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. R. HUTNAK	DATE 3-7-69	
ENG. L. GALE	DATE 3-10-69	TITLE ARITHMETIC OPERATION
PROJ. ENG. L. GALE	DATE 3-10-69	
PROD. D. CALL	DATE 3-10-69	
FIRST USED ON PDP-12		SIZE A · CODE ML · NUMBER KE12-Ø · REV. E
SCALE		
SHEET 1 OF 2		DIST.

PRINT SET KE12-Ø	DWG. NO.	REV. LET.	NO. OF SHEETS	TITLE	OPTION NO.
X	D-FD-KE12-0-2	A	1	EAE FETCH	
X	D-FD-KE12-0-3		1	EAE EXECUTE PART 1	
X	D-FD-KE12-0-4		1	EAE EXECUTE PART 2	
X	D-BS-KE12-0-EAEC	B	1	EAE CONTROL	
X	D-BS-KE12-0-EAED	A	1	EAE DISABLE	
X	D-BS-KE12-0-EAES		1	EAE STEP COUNTER TMD CONTROL	
X	D-BS-KE12-0-EAET		1	EAE TIMING	
	A-ML-EP12-0	REF	2	PROCESSOR	
	D-MU-EP12-0-1	REF	2	MODULE UTILIZATION PROC.	
	A-PL-EP12-0-1	REF	3	MODULE UTILIZATION PROC. (PL)	

TITLE ARITHMETIC OPERATION	SHEET 2 OF 2	SIZE A · CODE ML · NUMBER KE12-Ø · REV E

DRA 132

DEC 16-(325)-1048-1-N471

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T1

T2

T3

T4

OFF PAUSE

T5

OPR·IR3=1 · IR11=1

NOT NMI

NMI

$AC\phi\phi \neq AC\phi1 + (AC_{3-11}=\phi . MQ_{0-11}=\phi)$

NOT $AC\phi\phi \neq AC\phi1 + (AC_{3-11}=\phi . MQ_{0-11}=\phi)$

$\phi \rightarrow SC$

$\phi \rightarrow SC$
$1 \rightarrow$ RECYCLE SYNC

$1 \rightarrow$ T5 RECYCLE

IR4	IR7	
1	Ø	Ø → AC
1	1	Ø → MQ
		Ø → AC
Ø	1	AC → MQ
		Ø → AC

IA5	IA6	
1	Ø	MQ+AC → AC
Ø	1	SC+AC → AC

$1 \rightarrow$ EAE ON
$1 \rightarrow$ RECYCLE SYNC

NOT $AC\phi1 \neq AC\phi2 + (AC_{3-11}=\phi . MQ_{0-11}=\phi)$

$AC\phi1 \neq AC\phi2 + (AC_{3-11}=\phi . MQ_{0-11}=\phi)$

LINK, AC, MQ SHIFT LEFT
SC+1 → SC
Ø → MQ11

LINK, AC, MQ SHIFT LEFT
SC+1 → SC
Ø → MQ11

Ø → RECYCLE SYNC

Ø → T5 RECYCLE

Ø → EAE ON

NMI+T5 RECYCLE (1)

(N=5) MUY
(N=7) DIV
(N=15) ASR
(N=17) LSR

Ø → LINK

(N=3) SCL
(N=13) SHL

N=1
NMI+T5 RECYLE (1)

Ø → EXECUTE

1 → FETCH

TO NEXT INSTRUCTION

REVISIONS			
REV.	CHANGE NO	CHK	
A	EP12-00030	FV	11/13/69 D. MACKLIN

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINAL SURFACE QUALITY
REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL

FINISH

DRN.		DATE 11-26-68
CHK.		DATE 12/18/69
ENG.		DATE 2/14/69
PROJ. ENG.		DATE 2/14/69
PROD.		DATE 2/14/69

FIRST USED ON KE12

SCALE

SHEET / OF /

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: EAE FETCH

SIZE	CODE	NUMBER	REV.
D	FD	KE12-Ø-2	A

DIST.

DEC FORM NO. DRD 102A

SIZE D CODE FD NUMBER KE12-Ø-2 REV A

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EAE EXECUTE (PART 1)

T1

PC → MA

T2

DO = Ø: MA + 1 → PC

DO = 1: MA → PC

T3

MEM → MB

RSW → MB

T4

NOT MUY + DIV

MEM → SC

N = 3 (SCL)

N ≠ B

1 → RECYCLE SYNC

1 → T5 RECYCLE

MUY + DIV

DIV

MUY

Ø → SC

1 → RECYCLE SYNC

1 → T5 RECYCLE

OFF PAUSE

T5

1 → EAE ON T5 RECYCLE

SHL (N = 13): LINK, AC, MQ SHIFT LEFT; Ø → MQ11

ASR (N = 15): AC, MQ SHIFT RIGHT; AC ØØ → LINK, AC ØØ, AC Ø1

LSR (N = 17): AC, MQ SHIFT RIGHT; Ø → AC ØØ

SC ≠ 17: SC + 1 → SC

SC = 17: Ø → RECYCLE SYNC; SC + 1 → SC

Ø → T5 RECYCLE

Ø → EAE ON

1 → T5 RECYCLE
1 → EAE ON

MQ11 = Ø: LINK, AC, MQ SHIFT RIGHT

MQ11 = 1: LINK, Σ (AC + MB) MQ SHIFT RIGHT

SC = 13: Ø → RECYCLE SYNC; SC + 1 → SC

SC ≠ 13: SC + 1 → SC

MUY (N = 5)

1 → T5 RECYCLE

1 → FETCH

TO NEXT INSTRUCTION

REVISIONS	REV.	CHANGE NO.	CHK.

DEC FORM NO. DRD 102A

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

UNLESS OTHERWISE SPECIFIED

UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINAL SURFACE QUALITY
REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL

FINISH

DRN.		DATE 11-20-68
CHK.	Scanlon	DATE 2/18/69
ENG.		DATE 2/19/69
PROJ. ENG.		DATE 2/20/69
PROD.		DATE 2/19/69

FIRST USED ON
KE12

SCALE

SHEET OF

digital EQUIPMENT CORPORATION
MAYNARD MASSACHUSETTS

TITLE
EAE EXECUTE
PART 1

SIZE	CODE	NUMBER	REV.
D	FD	KE12-Ø-3	

DIST.

REV.	NUMBER	SIZE	CODE
	KE12-Ø-3	D	FD

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EAE EXECUTE PART 2 (DIVIDE)

T0

T2

T3

T4

OFF PAUSE

T5

ENTER FROM EAE EXECUTE PART 1

Ø → SC
1 → RECYCLE SYNC

1 → T5 RECYCLE

Ø → T5 RECYCLE

1 → EAE ON

(SC=Ø)+(SC=1)+MQ1Ø≠MQ11 (SC≠Ø)+(SC≠1)+MQ1Ø=MQ11

EN
Σ (MB) AND LINK AND $\overline{AC}$

EN
Σ MB AND LINK AND AC

SC=Ø + NOT CARRY ØØ

EN Σ NO SHIFT
LOAD AC

EN SUM SHIFT LEFT
EN MQ SHIFT LEFT
LOAD AC LOAD MQ
LOAD LINK

NOT SC≠Ø+MQ11(1) SC=Ø+MQ11(1)

MQ ØØ → AC11

MQ ØØ → AC11

SC=Ø + NOT CARRY ØØ SC≠Ø + CARRY ØØ

Ø → RECYCLE SYNC

SC=Ø SC≠Ø

Ø → MQ11

Σ LINK ADDER
AND MQ11
→ MQ11

SC=14 SC≠14

LOAD MQ
SC+1 → SC
Ø → RECYCLE SYNC

LOAD MQ
SC+1 → SC

Ø → T5 RECYCLE

MQ 1Ø(Ø) MQ 11(Ø) | MQ 1Ø(Ø) MQ 11(1) | MQ 1Ø(1) MQ 11(Ø) | MQ 1Ø(1) MQ 11(1)

Σ MB AND AC → AC

AC → AC

Σ MB AND $\overline{AC}$ → AC

$\overline{AC}$ → AC

1 → FETCH

TO NEXT INSTRUCTION

REVISIONS | REV. | CHANGE NO. | CHK

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINAL SURFACE QUALITY √
REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL

FINISH

DRN.		DATE 11-22-68
CHK'D	J Scanlon	DATE 3/19/69
ENG.		DATE 3/19/69
PROJ. ENG.		DATE 3/19/69
PROD.	W Call	DATE 2/14/69

FIRST USED ON
KE12

SCALE

SHEET OF

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
EAE EXECUTE
PART 2

SIZE	CODE	NUMBER	REV.
D	FD	KE12-Ø-4	

DIST.

DEC FORM NO. DRD 102A

SIZE D FD NUMBER KE12-Ø-4 REV.

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EAEC LONG INST L
EAEC INST H
-INS N EQ Ø1 H
-INS N EQ 11 H
M113 L35
N1 EAEC LONG INST H

EAEC INST L
INS 8 OPR H
INR IR Ø3 (1)H
INR IR 11 (1)H
M115 L29
M113 L35
K2 EAEC INST H

INS N EQ 11 H
M113 L35
M113 L35
F1 EAEC NMI H
EAEC NMI L

CPS EXECUTE (1)H
EAEC INST H
M113 L35
M111 L33
L2 EAEC EXECUTE H
EAEC EXECUTE L

-FLK ADDER LINK H
M111 L33
MQR MQ 11 (Ø)H
MQR MQ 11 (1)H
-FLK ADDER LINK H
M121 L31
V2

EAES SC Ø1 (Ø)L
EAES SC Ø2 (Ø)L
-EAEC DIV EXECUTE L
M115 L34
EAEC INST H
RCS EN MQ SH LEFT H
M115 L34
S2 EAEC SH L EN L

EAET ON (1)H
EAEC EXECUTE H
-INS N EQ 13 H
-INS N EQ Ø7 H
M117 L30
S1 EAEC R SH EN L

EAEC MQ 11 INSERT L
-EAES SC EQ Ø H
EAEC DIV EXECUTE H
M115 L29
M111 M38
H1 EAEC MQ 11 INSERT H

EAEC SETUP H
INR IR Ø5 (1)H
M113 L36
N2 EAEC ENABLE MQ L

M111 L33
D2 EAEC SETUP H
EAEC INST H
CPT TSS (1)H
EAET ON (Ø)H
CPS FETCH B (1)H
M117 L30
EAEC SETUP L
INR IR Ø6 (1)L
M121 L31
J2 EAEC ENABLE SC H

MQR MQ 10 (Ø)H
MQR MQ 11 (Ø)H
MQR MQ 10 (1)H
MQR MQ 11 (1)H
M121 L31
M111 L33
-EAES SCØ-3 EQ Ø H
EAEC DIV EXECUTE H
-INS N EQ Ø7 H
EAET ON (1)H
M160 L37
EAEC LAST DIV H
MQR MQ 10 (Ø)H
EAEC SETUP H
INR IR Ø7 B (Ø)H
INR IR Ø4 (Ø)H
EAET ON (1)L
EAEC DIV EXECUTE L
M117 L39
R1 EAEC ENABLE AC L
INS N EQ Ø7 H
M115 L34
V1 EAEC ENABLE -AC L

EAEC SETUP H
PRD MB Ø7 (1)H
M113 L36
S1 EAEC EN LD MQ L
M111 L33
B1 EAEC AC TO MQ EN H
P2
PRC MB Ø4 (Ø)H
M113 L36
S2 EAEC AC TO MQ EN L

INS N EQ Ø5 H
CPT TS RECYCLE (1)H
EAET ON (1)H
M115 L29
H2 EAEC MUL ADD L

INS N EQ Ø7 H
EAEC EXECUTE H
CPT RECYCLE SYNC (1)H
M115 L29
M111 L33
K1 EAEC DIV EXECUTE H
EAEC DIV EXECUTE L

EAEC DIV EXECUTE L
EAEC LAST DIV H
MQR MQ 11 (Ø)H
M113 L35
V2 EAEC EN MB H

EAEC LAST DIV L
INS N EQ Ø7 H
EAET ON (1)H
EAES SC Ø1 (1)H
CPT RECYCLE SYNC (Ø)H
M117 L30
M113 L35
K1 EAEC LAST DIV H

EAEC ENABLE -AC L
EAEC SETUP H
INR IR Ø9 (1)H
M115 L29
M115 L29
S2 EAEC LINK DISABLE H
EAEC EXECUTE H
INS N EQ 17 H
M113 L36
-EAEC LINK LD EN L
M112 L38
S1 EAEC LINK DISABLE L

EAEC DIV EXECUTE H
MQR MQ 11 (1)L
EAES SC EQ Ø L
M113 L35
M113 L35
S1
MQR MQ Ø0 (1)H
MQR MQ Ø0 (Ø)H
M121 L31
S1 -EAEC LOW SH IN L
M111 L33

REVISIONS		
CHK	CHANGE NO.	REV.
JB	00001	A
	J.SCANLAN 3-13-69	
	EP12-00001	B
	[signature] 7-9-69	
	[signature] 7-15-69	

DRN. D.L.SHEPARD	DATE 2-20-69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. J.BISONETTE	DATE 2-20-69	
ENG. L.GALE	DATE 2-20-69	TITLE EAE CONTROL
PROJ. ENG. L.GALE	DATE 2-20-69	
PROD. W.CALL	DATE 2-20-69	
FIRST USED ON KE12		SIZE D / CODE 65 / NUMBER KE12-0-EAEC / REV. B
SCALE		
SHEET 1 OF 1		DIST.

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M906
K27
B1 EAEC EN LD MQ L *M90E K27

M906
K27
J1 EAEC ENABLE -AC L

M906
K27
E1 EAEC AC TO MQ EN L

M906
K27
H1 EAEC ENABLE AC L

M906
K27
J1 EAEC ENABLE MQ L

M906
K27
L1 EAEC LAST DIV L

M906
K27
V2 EAET MQ LOAD (0)H — EAEC LINC DISABLE H N2

M906
K27
P1 EAEC LINK LD EN — EAEC LONG INST H R2

M906
K27
S1 EAEC MUL ADD L — EAEC EN MB H F1

M906
K27
D2 EAEC R SH EN L — EAEC ENABLE SC H K1

M906
K27
E2 EAEC SETUP L — EAEC INST H N1

M906
K27
H2 EAEC SH L EN L — EAEC MQ 11 INSERT H R1

M906
K27
K2 EAET ON (0)H — RCS EN MQ SH LEFT H F2

M906
K27
M2 EAET RECYCLE L — EAET ON (1)H J2

M906
K27
P2 FLE K28K2

* INSERTED ONLY WHEN SYSTEM DOES NOT HAVE KE12.

REVISIONS		
CODE	CHANGE NO.	REV.
JB	00002	A
	ADS	
G Scanlon 3/13/69		

DWN. R A Shepard	DATE 3/20/69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. H Simonitis	DATE 3/24/69	TITLE EAE DISABLE
ENGR. [illegible]	DATE 3/24/69	
PROJ. ENG. [illegible]	DATE 3/24/69	
PROD. [illegible]	DATE 3/24/69	
FIRST USED ON KE12		SIZE D · CODE 65 · NUMBER KE12-0-EAED · REV. A
SCALE		
SHEET 1 OF 1		DIST.

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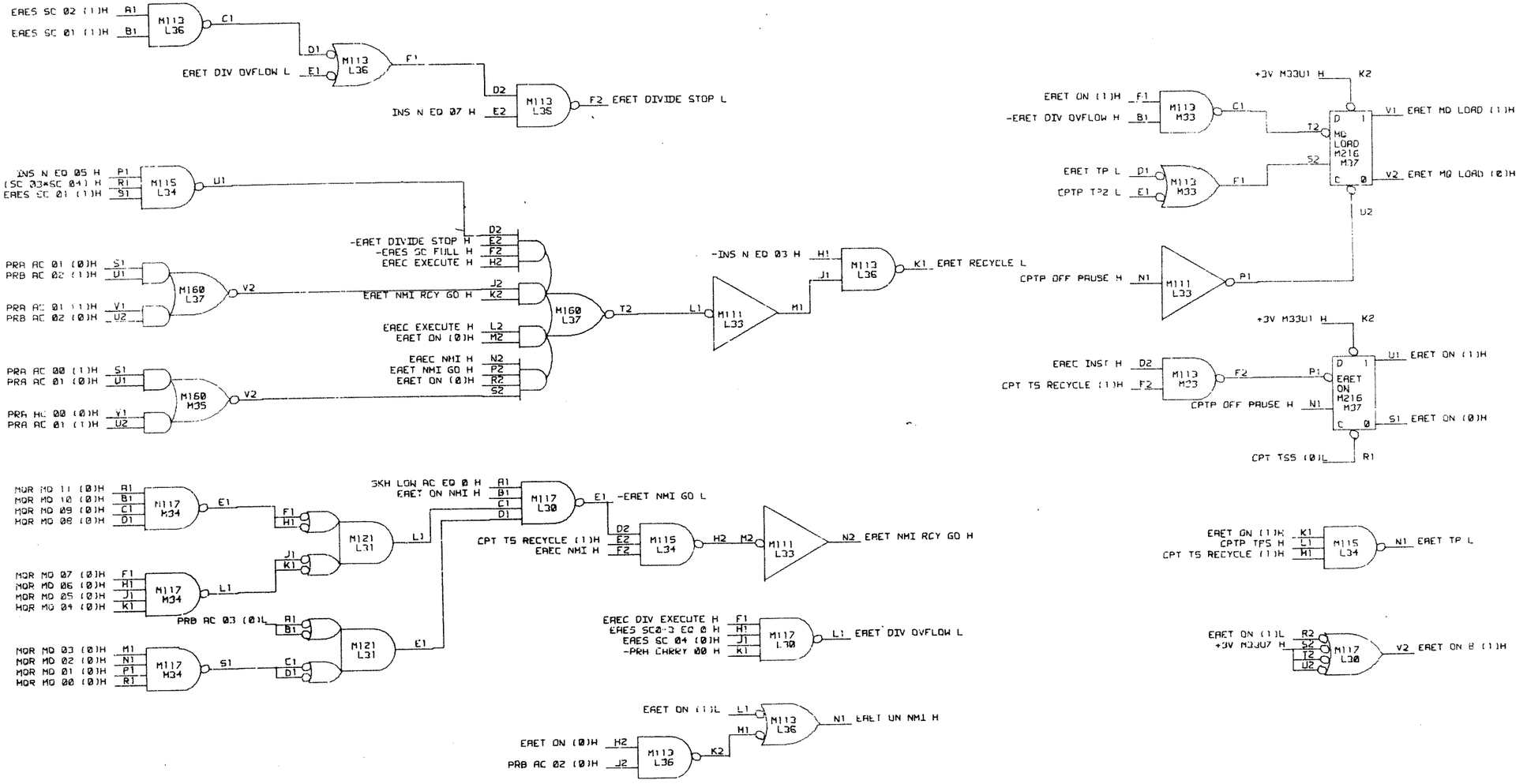
EAES SC Ø1 (1)H
EAES SC Ø2 (1)H
EAES SC Ø3 (1)H
EAES SC Ø4 (1)H
M117 M34
P2
+3V M34U1 H
EAET ON B (1)H
EAES SC Ø0 (1)H
M160 M35
T2
PRD MB Ø7 (Ø)H
EAES EN MB TO SC H
+3V M34U1 H
EAET ON B (1)H
EAES SC Ø0 (Ø)H
M111 L33
EAES SC Ø0 (1)H
EAES SC Ø3 (1)H
EAES SC Ø4 (1)H
M115 L34
J1
M113 M33
K2 EAES SC FULL L
EAES SC Ø0 (1)H
P2
M111 L33
R2
EAES EN MB TO SC H
PRE MB Ø8 (Ø)H
EAES SC Ø1 (Ø)H
EAET ON B (1)H
+3V M34U1
M160 M36
T2
EAES SC Ø3 (1)H
EAES SC Ø4 (1)H
M113 M33
N1
M111 L33
S1
EAET ON B (1)H
EAES SC Ø2 (Ø)H
EAES (SC Ø3*SC Ø4) H
EAEC NMI H
EAET ON (1)H
M115 L29
D1 EAES EA MQ SH L 1 L
EAES SC 3 EQ Ø L
EAES SC Ø0 (Ø)H
EAES SC Ø1 (Ø)H
EAES SC Ø2 (Ø)H
EAES SC Ø3 (Ø)H
M117 M34
V2
M111 L33
V1
U1
EAES SC Ø-3 EQ Ø H
EAES SC Ø4 (Ø)H
M113 M33
K1 EAES SC EQ Ø L
EAES (SC Ø3*SC Ø4) L
EAES SC Ø2 (1)H
EAET ON B (1)H
EAES SC Ø2 (Ø)H
EAES SC Ø4 (1)H
EAET ON B (1)H
M160 M35
R1
EAES EN MB TO SC H
PRF MB 10 (Ø)H
EAES SC Ø3 (1)H
EAES SC Ø4 (Ø)H
EAET ON B (1)H
EAES SC Ø4 (Ø)H
M160 M36
V2
PRF MB 11 (Ø)H
EAES EN MB TO SC H
EAEC DIV EXECUTE L
INS N EQ 13 L
M113 M33
N2
CPT TS RECYCLE (1)H
-EAET DIV OVFLOW H
EAEC EXECUTE H
M117 M34
J2 EAES EA MQ SH L 2
-INS N EQ Ø5 H
-INS N EQ Ø7 H
SLA EX TS4 H
M115 L34
D1
S2
M111 L33
T2
EAES EN MB TO SC H
CPTP TP4 H
EAEC NMI L
EAEC EXECUTE L
M113 M33
S1
EAET MQ LOAD (1)L
M113 M33
T2
M113 M33
EAES LOAD SC H
+3V M34U1 H
EAES SC Ø0 M216 M37
EAES SC Ø1 M216 M37
EAES SC Ø2 M216 M37
EAES SC Ø3 M216 M37
EAES SC Ø4 M216 J29

NOTE:
N=Ø1 NOP
N=Ø3 SCL
N=Ø5 MUY
N=Ø7 DVI
N=11 NMI
N=13 SHL
N=15 ASR
N=17 LSR

REVISIONS		
CHK	CHANGE NO.	REV.

DSGN. B. J. Hayward	DATE 4/24/69	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS	
CHK'D. J. Bisson	DATE 5/26/69	TITLE EAE STEP COUNTER & MQ CONTROL	
APVD. D. Hale	DATE 5/26/69		
MGR. D. Hale	DATE 5/26/69		
NEXT USED ON KE12			
SCALE		CODE 85	NUMBER KE12-Ø-EAES
SHEET 1 OF 1		DIST.	REV. Ø0



DRN	S Shepard	DATE	6/25/87
CHKD	V Drumm	DATE	7/24/87
		DATE	12/20/87
		DATE	1/26/88
		DATE	2/22/88
USED ON	KE12		
SCALE			
SHEET	1 OF 1		

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: EAE TIMING

SIZE	CODE	NUMBER	REV.
D	85	KE12-0-EAET	00

DIST.

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MASTER DRAWING LIST

DWG. NO.	REV. LET.	NO. OF SHEETS	TITLE
A-ML-EP12-0	REF	2	PROCESSOR
~~A-ML-PDP12-0~~		~~2~~	~~PDP12 SYSTEM~~
~~K-WL-EP12-0-3~~	~~REF~~		~~WIRE LIST~~
D-MU-EP12-0-1	REF	2	MODULE UTILIZATION PROC
~~D-MU-EP12-0-2~~	~~REF~~		~~MODULE UTILIZATION PROC~~
D-BS-XY12-0-PCL	A	1	PCL PLOTTER CONTROL
A-PL-EP12-0-1	REF	3	MODULE UTILIZATION PROC PL
~~A-PL-EP12-0-2~~	~~REF~~		~~MODULE UTILIZATION PROC PL~~
C-IA-7005543-0-0	#	1	PLOTTER CONTROL CABLE W023

REVISIONS			
REV.	DATE	CHG. NO.	APP'D.
A	12/69	00001	L.G.
B	6/70	EP12-23	L.G.
C	3/71	EP12-36	J.S.
D	1/72	~~EP12-44~~	R.M.

DRN. J. APREA	DATE 3/7/69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. R. HUTNAK	DATE 3/7/69	
ENG. L. Gale	DATE 3/10/69	TITLE PLOTTER CONTROL
PROJ. ENG. L. Gale	DATE 3/10/69	
PROD. W Call	DATE 3/10/69	
FIRST USED ON PDP-12		SIZE A | CODE ML | NUMBER XY12-0 | REV. D
SCALE		
SHEET 1 OF 1		DIST.

DEC FORM NO. DRA 103

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PRE MB Ø8 (Ø)L
PRD MB Ø7 (Ø)L
PRB MB Ø3 (1)H — MF2
PRC MB Ø4 (Ø)H — MH2
PRD MB Ø6 (Ø)H — MD2
PRC MB Ø5 (1)H — ME2
IOC IOP 1 H — NH2
PCL PLTR IOT H
PRE MB Ø8 (1)H — MK2
PCL FAST OP DONE L
PRD MB Ø7 (1)H — MS2
PRD MB Ø7 (Ø)H
PRE MB Ø8 (Ø)H
PCL PLTR IOT H — MM2
IOC IOP 2 H — NP2
5Ø INST L
PRE MB Ø8 (1)H
IOC IOP 4 H
PCL PTRL IOT H
5Ø INST L
5Ø INST H
PCL SLOW OP DONE L
PRD MB Ø7 (1)H
PCL PLTR FLAG (Ø)H — NS2
PCL PLTR IOT H — NV1
IOC IOP 4 H
PRE MB Ø8 (Ø)H
DLY 1 35 MS Ø — NK2
PCL IO PRESET L — ND2
PCL SLOW OP DONE L
DLY 2 (1)H
DLY 2 (1)L
PCL IO PRESET L — MP2
PCL FAST OP DONE L
PCL PLTR IOT H
IOC IOP 2 H
PCL 5Ø INST H
IOC IO PRESET H — NN2
PCL IO PRESET L
IOC IOP 4 H — NT2
PRD MB Ø7 (Ø)H — NU1
IOC IOP 1 L — NL2
IOC IOP 2 L — NM2
PCL PLTR IOT H
PCL 5Ø INST L
DLY 1 2.5 MS Ø — NJ2
DLY 2 (1)H
DLY 2 (Ø)H

M7Ø4
MØ5
NØ5

D 1 PEN RIGHT C Ø
D 1 PEN LEFT C Ø
D 1 DRUM UP C Ø
D 1 DRUM DOWN C Ø
D 1 PEN UP C Ø
D 1 PEN DOWN C Ø
D 1 PLTR FLAG C Ø

MJ2 PCL PEN R H — C2 15 P2 4
ML2 PCL PEN L H — R2 3
MN2 PCL DRUM UP H — S2 1
MR2 PCL DRUM DOWN H — T2 2
MT2 PCL PEN UP H — U2 9
MV2 PCL PEN DOWN H — V2 10
W Ø2 5 N Ø9
CANNON SK-19-21Ø-1/2

PCL PLTR IOT H
IOC IOP 1 H
PCL 5Ø INST H
NE2 INT SKIP BUS L
NOTE: SKIP AND INT REQUESTS ARE OPEN COLLECTOR OUTPUT
+3V
NF2 PCL INT RQST BUS L

REVISIONS			
CHK	CHANGE NO.	REV.
	EP12-00036	A

J. SCANLAN 4-29-71 J. Scanlan 5-20-71

DEC FORM NO. DRD 102A

UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINAL SURFACE QUALITY ✓
REMOVE BURRS AND BREAK SHARP CORNERS
MATERIAL
FINISH

QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST			

DRN. Joe Howe	DATE 2-5-69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. Tom Pitt	DATE 2-25-69	
ENG. W. Clayton	DATE 2-28-69	TITLE: PCL PLOTTER CONTROL
PROJ. ENG. W. Clayton	DATE 2-28-69	
PROD. W. Hall	DATE 3/4/69	
FIRST USED ON XY12		SIZE D CODE 85 NUMBER XY12-Ø-PCL REV. A
SCALE		DIST.
SHEET 1 OF 1		

SIZE D CODE 85 NUMBER XY12-Ø-PCL REV A

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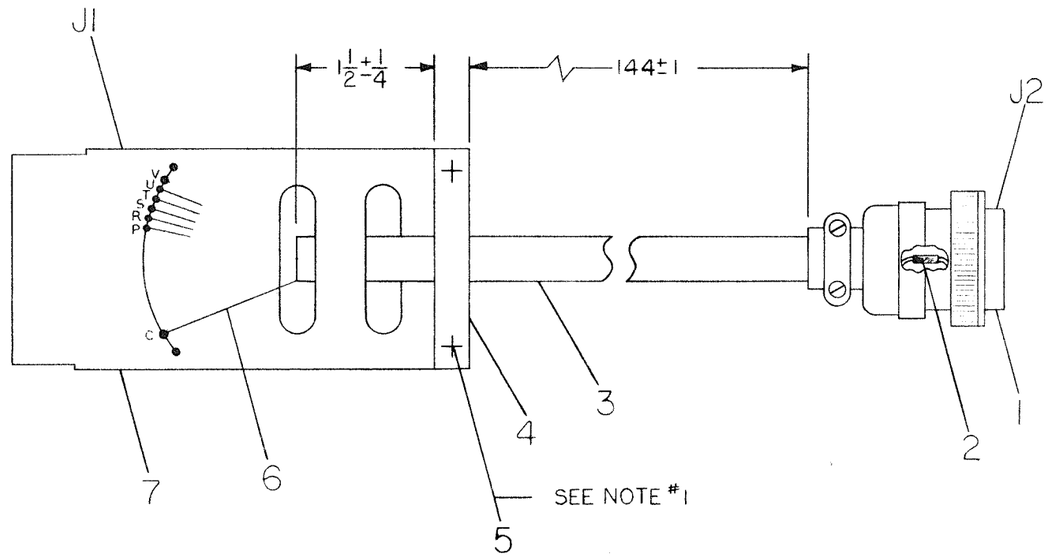
WIRE TABLE	
CONNECTION	
FROM	TO
J1 - C	J2 - 15
P	4
R	3
S	1
T	2
U	9
J1 - V	J2 - 10



NOTES:

1. ASSEMBLE CABLE CLAMP #4 WITH EYELETS #5 AFTER WIRE #6 IS SOLDERED TO BOARD.

QTY.	DESCRIPTION	PART NO.	ITEM NO.
	PARTS LIST		
1	WØ23 CABLE CONNECTOR	5002726	7
A/R	#18 AWG STRD TEF WHT		6
2	EYELET #A-94 E.B. STIMPSON		5
1	CLABLE CLAMP	5302016	4
A/R	BLK VINYL TUBING #2 — 17/64 ID		3
7	TUBING HY-SHRINK #18 X 1/4 LONG RED		2
1	CANNON SK-19-21C-1/2		1

REVISIONS			
CHK	CHANGE NO.	REV.	
GM	ECO 5301 CHANGED DIM FROM 120±1 TO 144±1	A	L. Gale 10/10/67
	WØ23-00003	B	L. GALE

UNLESS OTHERWISE SPECIFIED

UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINAL SURFACE QUALITY ✓
REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL //

FINISH //

DRN. P Sparrow	DATE	6-30-67
CHK'D. W Gagnon	DATE	7-21-67
ENG. [illegible]	DATE	7-22-67
PROJ. ENG. [illegible]	DATE	7-27-67
PROD. [illegible]	DATE	7-27-67

FIRST USED ON C-UA-35C-C-0

SCALE 1/1

SHEET 1 OF 1

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
PLOTTER CONTROL
CABLE WØ23

SIZE	CODE	NUMBER	REV.
C	1A	7005543-0-0	B

DIST.

REV. B
NUMBER 7005543-0-0
SIZE C CODE 1A

DEC FORM NO. DRC 100

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MASTER DRAWING LIST

DWG. NO.	REV. LET.	NO. OF SHEETS	TITLE
A-ML-EP12-0	REF	2	PROCESSOR
D-MU-EP12-0-1	REF	2	MODULE UTILIZATION PROC
D-BS-KT12-0-TSS	D	1	PDP-12 TIME SHARING OPTION
A-PL-EP12-0-1	REF	3	MODULE UTILIZATION PROC PL
A-SL-KT12-0-2		1	SOFTWARE LIST
A-SP-KT12-0-1		2	ACCEPTANCE PROCEDURE

REVISIONS			
REV.	DATE	CHG. NO.	APP'D.
A	4/18/69	EP12-02	J.S.
B	7/70	EP12-26	L.G.
C	10/70	EP12-30	L.G.
D	3/71	EP12-36	J.S.
E	1/72	EP12-44	R.M.
F	7/72	EP12-46	R.I.

DRN. J. SCANLAN	DATE 3/7/69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. R. Hutnak	DATE 3/7/69	
ENG. L. Gale	DATE 3/10/69	TITLE PDP-12 TIME SHARING OPTION
PROJ. ENG. L. Gale	DATE 3/10/69	
PROD. W Call	DATE 3/10/69	
FIRST USED ON		SIZE A / CODE ML / NUMBER KT12-0 / REV. F
SCALE		
SHEET 1 OF 1		DIST.

DEC FORM NO. DRA 103

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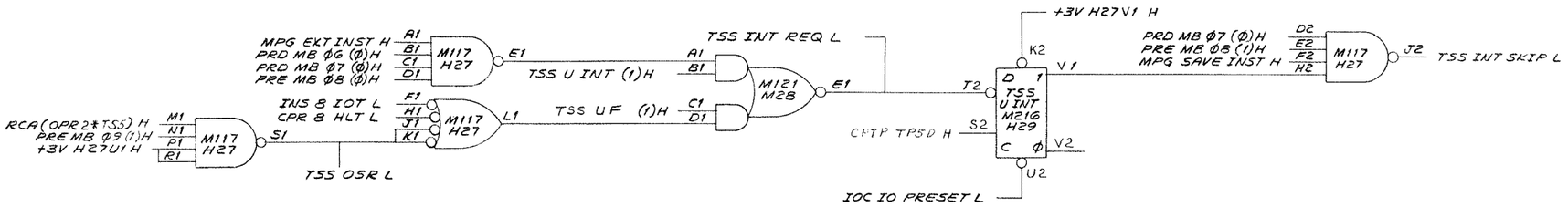

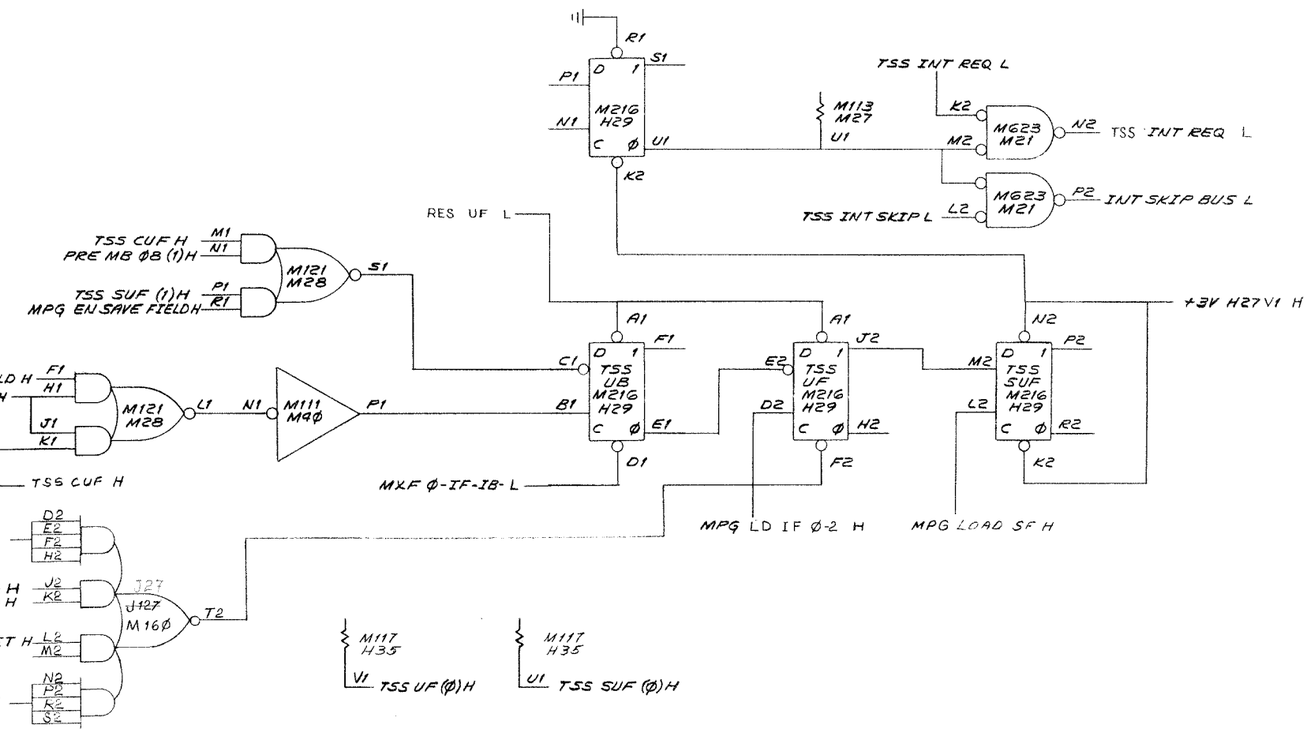

REVISIONS			
CHK	CHANGE NO.		REV
CWS	EP12-00002	J. SCANLON 1/22/69	A
	EP12-00026	D. MACKLIN 8/18/70	B
FV	EP12-00030	D. MACKLIN 11-9-70	C
	EP12-00036	J. SCANLON 5-20-71	D

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

UNLESS OTHERWISE SPECIFIED

UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINAL SURFACE QUALITY
REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL

FINISH

DRN.		DATE 3/1/69
CHKD.	J. Scanlon	DATE 3/1/69
ENG.		DATE 3/7/69
PROJ. ENG.		DATE 3/7/69
PROD.	D. Cull	DATE 3/7/69

FIRST USED ON KT12

SCALE

SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE
PDP-12 TIME SHARING OPTION

SIZE	CODE	NUMBER	REV.
D	85	KT12-Ø-TSS	D

DIST.

DEC FORM NO. DRD 102A

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MASTER DRAWING LIST

DWG. NO.	REV. LET.	NO. OF SHEETS	TITLE
~~A-ML-PDP12-0~~	~~REF~~	~~2~~	~~PDP 12 SYSTEM~~
A-ML-EP12-0	REF	2	PROCESSOR
~~K-WL-EP12-0-3~~	~~REF~~		~~WIRE LIST~~
D-MU-EP12-0-1	REF	2	MODULE UTILIZATION PROC.
~~D-MU-EP12-0-2~~	~~REF~~		~~MODULE UTILIZATION PROC.~~
A-PL-EP12-0-1	REF	3	MODULE UTILIZATION PROC. PL
~~A-PL-EP12-0-2~~	~~REF~~		~~MODULE UTILIZATION PROC. PL~~
D-BS-DP12-0-DTTC	B	1	DTTC DATAPHONE CLOCK
D-BS-DP12-0-DTTI	B	1	DTTI TELETYPE RECEIVER
D-BS-DP12-0-DTTO	C	1	DTTO TELETYPE TRANSMITTER
A-SP-DP12-0-1		7	ENGINEERING SPECIFICATION

REVISIONS			
REV.	DATE	CHG. NO.	APP'D.
A	2/70	EP12-20	L.G.
B	5/70	EP12-22	D.C.
C	9/70	EP12-29	L.G.
D	1/72	EP12-44	R.M.

DRN. J.APREA	DATE 3/7/69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. K. RUSS	DATE 7/25/69	
ENG. F. Gale	DATE 8/11/69	TITLE TTY/DATAPHONE
PROJ. ENG. F. Gale	DATE 8/11/69	
PROD. D Call	DATE 8/18/69	
FIRST USED ON PDP12		SIZE A · CODE ML · NUMBER DP12-A · REV. D
SCALE ~~H~~		
SHEET 1 OF 1		DIST.

DEC FORM NO. DRA 103

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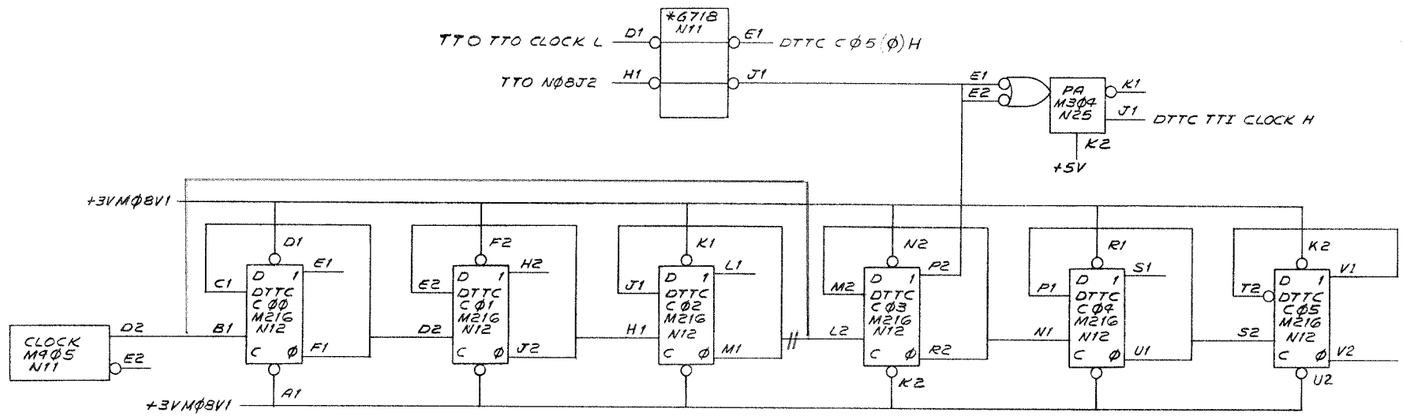

DP12-A

WHEN THE DP12 IS USED TO DRIVE A TELETYPE AT 11Ø BAUD, THE M4Ø5 (N11) AND M216 (N12) ARE NOT USED. G718 MODULE IS PLACED IN SLOT N11 THEREBY CONNECTING THE PDP-12 TELETYPE TO THE DP12 INPUT AND OUTPUT MODULES.

DP12-B

WHEN THE DP12 IS USED AT OTHER BAUD RATES (UP TO 1Ø,ØØØ BAUD) THE CRYSTAL CLOCK (M4Ø5, N11) IS SELECTED TO BE 128 TIMES THE BAUD RATE.

FOR BAUD RATES BETWEEN 1Ø,ØØØ TO 1ØØ,ØØØ THE WIRE FROM N12L2 TO N12M1 IS REMOVED AND A WIRE IS ADDED FROM N12L2 TO N11D2. THE CRYSTAL RATE IS THEN SELECTED TO BE 16 TIMES THE BAUD RATE.

USE CABLE BC01A-25 FOR INTER-CONNECTION TO DATAPHONE.

The function of G718 is given by these two jumpers:
N11 D1 - N11E1
N11 H1 - N11J1

CHANGE INCORPORATED

REVISIONS			
CHK	CHANGE NO.	REV.	
[illegible]	EP12-00003	A	T Sullivan 5-29-69 GALE 6/20/69
[illegible]	EP12-00020	B	[illegible] 8-8-70 L. GALE [illegible] 8/12/70

QTY.	DESCRIPTION	PART NO.	ITEM NO.
	PARTS LIST		

UNLESS OTHERWISE SPECIFIED
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINAL SURFACE QUALITY / REMOVE BURRS AND BREAK SHARP CORNERS
MATERIAL
FINISH

DRN. [illegible] DATE 2-23-69
CHK'D [illegible] DATE 2/27/69
ENG. [illegible] DATE 2-27-69
PROJ. ENG. [illegible] DATE 2-27-69
PROD. [illegible] DATE 2/27/69
FIRST USED ON D12
SCALE NONE
SHEET OF

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE
DTTC DATAPHONE CLOCK

SIZE D | CODE BS | NUMBER DP12-Ø-DTTC | REV. B
DIST.

DEC FORM NO. DRD 102A

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DTTI TTØ L
DTTI TT1 L
DTTI TT2 L
DTTI TT3 L
DTTI TT4 L
DTTI TT5 L
DTTI TT6 L
DTTI TT7 L
DTTI SKIP L
MK2
MR2
MS2
ML1
MM1
MP2
MT2
MN2
NH2
U1
M117 L13
DTTI STROBE H
DTTI REC PRESET L
DTTI DATA H
DTTI SHIFT H
+3V
MR1
MK1
MJ2
DTTI Ø
DTTI 1
DTTI 2
DTTI 3
DTTI 4
DTTI 5
DTTI 6
DTTI 7
ND2
IOC IOP 1 H
DTTI KEYBOARD SELECT H
DTTI KEYBOARD FLAG (1)H
MF2
DTTI KEYBOARD FLAG (Ø)H
DTTI START ENABLE L
+3V MØBV1 H
DTTO TTI CLOCK H
NR1
NS2
DTTI CLOCK SCALE 2 (1)H
DTTI IN ACTIVE (1)H
NU1
NK2
MS1
DTTI KEYBOARD SELECT H
IOC IOP 2 H
NJ2
NE2
DTTI TT AC CLEAR L
V1
M113 L21
+3V
ND1
ME2
DTTI KCC L
IOC IO PRESET H
NF2
DTTI SETUP L
* SEE NOTE NØ3
E2
NM2
ST
MM2
DTTI DATA L
DTTI SPIKE DETECTOR (1)H
PRB MB Ø3 (1)H
PRC MB Ø4 (Ø)H
PRC MB Ø5 (Ø)H
PRD MB Ø6 (Ø)H
PRD MB Ø7 (Ø)H
PEE MB Ø8 (Ø)H
MD2
ME1
MF1
MH1
MH2
MJ1
MP1
DTTI KEYBOARD SELECT H
+3V MØBV1 H
DTTI KEYBOARD SELECT H
IOC IOP 4 H
ML2
MV1
DTTI STROBE H
NN1
DTTI SKIP L
DTTO SKIP L
L1
M1
M113 MØB
N1
L2
M2
N2
DTTI SKIP TO BUS L
DTTO TPR FLG (1)L
DTTI KEYBOARD FLAG (1)L
RCA EN TT INT (Ø)H
P1
R1
S1
P2
R2
S2
M113 K22
U1
DTTI TT INT L
DTTI IN ACTIVE (1)L
DTTI IN LAST UNIT (1)L
DTTI START ENABLE L
M7Ø6
MØ9
NØ9
DTTI KCC L
MV2
NL2
DTTI DTTI 7 (Ø)H
DTTI SHIFT H
DTTI IN LAST UNIT
DTTC TTI CLOCK H
MN1
DTTI CLOCK SCALE Ø
DTTI CLOCK SCALE 1
DTTI CLOCK SCALE 2
NT2
NS1
NP2
DTTI IN STOP 1
NU2
DTTI IN STOP 2
NV2
NN2
DTTI IN ACTIVE
-DTTI SHIFT H
DTTI SPIKE DETECTOR (1)H
DTTI SPIKE DETECTOR (Ø)H
DTTI READER RUN
MU2
M2
* SEE NOTE NØ3
DTTI B READER RUN H
NR2
~~DTTI IN STOP 2 (1)L~~ NW2
DTTI IN STOP 1(1)L NT2
DTTI REC PRESET L
NS2
DTTI SHIFT H
DTTI IN LAST UNIT (1)H
+3V

NOTE: USE A WØ76 TELETYPE MODULE WITH DPI2-A OPTION. WITH DPI2-B OPTION USE M850 LEVEL CONVERTER. WHEN NEITHER CONNECTOR IS INSERTED, INSTALL G700YA DATAPHONE DISABLE MODULE TO PREVENT SPURIOUS INTERRUPTS CAUSED BY FLOATING DTTI DATA L.

REVISIONS				
CHK	CHANGE NO.	REV.		
[illegible]	EPI2-00004	A	L. GALE	11/5/69
FV	EPI2-00022	B	CLAYTON	1/22/70

QTY.	DESCRIPTION	PART NO.	ITEM NO.
	PARTS LIST		

UNLESS OTHERWISE SPECIFIED
UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINAL SURFACE QUALITY / REMOVE BURRS AND BREAK SHARP CORNERS
MATERIAL
FINISH

DRN. [signature] DATE 2-22-69
CH'D. [signature] DATE 2/27/69
ENG. [signature] DATE 2-28-69
PROJ. ENG. [signature] DATE 2-28-69
PROD. [signature] DATE 2/28/69
FIRST USED ON DP12
SCALE
SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: DTTI TELETYPE RECEIVER

SIZE	CODE	NUMBER	REV.
D	85	DP12-Ø-DTTI	B

DIST.

DEC FORM NO. DRD 102A

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PRB MB Ø3 (1) H
PRC MB Ø4 (Ø) H
PRC MB Ø5 (Ø) H
PRD MB Ø6 (Ø) H
PRD MB Ø7 (Ø) H
PRE MB Ø8 (1) H
+3V NJ1 H
ME2
ME1
MF2
MF1
MH2
MJ2
NJ1
MN1
+3V MØBV1 H
DTTO SELECT H
IOC IOP 4 H
MR1

* NOTE: USE A WØ76 TELETYPE MODULE WITH DPI2-A OPTION. WITH DPI2-B OPTION USE M850 LEVEL CONVERTER. WHEN NEITHER CONNECTOR IS INSERTED, INSTALL G700YA DATAPHONE DISABLE MODULE TO PREVENT SPURIOUS INTERRUPTS CAUSED BY FLOATING DTTI DATA L.

+3V MØBV1 H
MN2
MP2
MR2
ML2
MM2
MU2
MS2
MT2
MU1
PRC AC Ø4 (1) H
PRC AC Ø5 (1) H
PRD AC Ø6 (1) H
PRD AC Ø7 (1) H
PRE AC Ø8 (1) H
PRE AC Ø9 (1) H
PRF AC 1Ø (1) H
PRF AC 11 (1) H
MK2
ML1
DTTO ENB
DTTO Ø
DTTO 1
DTTO 2
DTTO 3
DTTO 4
DTTO 5
DTTO 6
DTTO 7
DTTO SHIFT H
DTTO PRESET L
DTTO OUT ACTIVE (Ø) L
MD2
DTTO LINE
MV2
DTTO B MAGNET DRIVER H
DTTO = Ø L
MH1

M7Ø7
M1Ø
N1Ø

DTTO OUT ACTIVE (1) L
+3V MØBV1 H
-DTTO SHIFT L
DTTO OUT ACTIVE (1) H
NP2
DTTO FREQ DIV
DTTC CØ5(Ø) H
NR2
DTTO OUT STOP 1
NP1
DTTO OUT STOP 1.5
NN1
DTTO OUT STOP 2
+3V
DTTO SHIFT H

DTTO OUT STOP 2 (Ø) H
DTTO ENB (1) H
MK1
NN2
DTTO OUT ACTIVE (1) H
-DTTO = Ø H
MD1
DTTO OUT ACTIVE
+3V
DTTO OUT ACTIVE (1) L
IOC IOP 1 H
NH2
NJ2
DTTO SKIP L
DTTO SELECT H
M113
L13
V1
DTTO = Ø L
DTTO SHIFT H
DTTO TPR FLG
NK2

IOC IO PRESET H
NE2
+3V
DTTO PRESET L
+3V MØBV1 H
NF2
+3V
DTTO SELECT H
IOC IOP 2 H
NØ2

A2 +5V
B2 -15V
C2
D2
E2
F2 DTTI DATA L
H2 DTTO B MAGNET DRIVER H
J2
K2
L2
M2 DTTI B READER RUN H
N2
P2
R2
S2
T2
U2
V2 -3ØV

*SEE NOTE NØ3

REVISIONS				CHK
REV.	CHANGE NO.			
A	EP12-00003	T. Quillin	GALE	
B	EP12-00004		L. GALE	
C	EP12-00022			FV

CLAYTON

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

UNLESS OTHERWISE SPECIFIED
UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINAL SURFACE QUALITY / REMOVE BURRS AND BREAK SHARP CORNERS
MATERIAL
FINISH

DRN. DATE 2-22-69
CHK'D. DATE 2/27/69
ENG. DATE 2-4-69
PROJ. ENG. DATE 3-19-69
PROD. DATE 3/28/69
FIRST USED ON DP12
SCALE NONE
SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE
DTTO TELETYPE TRANSMITTER

SIZE D | CODE 85 | NUMBER DP12-Ø-DTTO | REV. C
DIST.

DEC FORM NO. DRD 102A

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MASTER DRAWING LIST

DWG. NO.	REV. LET.	NO. OF SHEETS	TITLE
~~A-ML-PDP12-0~~	~~REF~~	~~2~~	~~PDP 12 SYSTEM~~
A-ML-EP12-0	REF	2	PROCESSOR
~~K-WL-EP12-0-3~~	~~REF~~		~~WIRE LIST~~
D-MU-EP12-0-1	REF	2	MODULE UTILIZATION PROC.
~~D-MU-EP12-0-2~~	~~REF~~		~~MODULE UTILIZATION PROC.~~
A-PL-EP12-0-1	REF	3	MODULE UTILIZATION PROC. PL
~~A-PL-EP12-0-2~~	~~REF~~		~~MODULE UTILIZATION PROC. PL~~
D-BS-DP12-0-DTTC	B	1	DTTC DATAPHONE CLOCK
D-BS-DP12-0-DTTI	B	1	DTTI TELETYPE RECEIVER
D-BS-DP12-0-DTTO	C	1	DTTO TELETYPE TRANSMITTER
D-IA-BC01A-0-0	#	1	LEVEL CONVERTER (BI POLAR) CABLE
A-SP-DP12-0-1		7	ENGINEERING SPECIFICATION

REVISIONS			
REV.	DATE	CHG. NO.	APP'D.
A	2/70	EP12-20	L.G.
B	5/70	EP12-22	D.C.
C	9/70	EP12-29	L.G.
D	1/72	EP12-44	R.M.

DRN. J. APREA	DATE 3/7/69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. K. RUSS	DATE 7/25/69	
ENG. L. Gale	DATE 8/11/69	TITLE: TTY/DATAPHONE (EIA LEVEL)
PROJ. ENG. L. Gale	DATE 8/11/69	
PROD. W Call	DATE 8/18/69	
FIRST USED ON: PDP12		
SCALE: —		
SHEET 1 OF 1		

SIZE	CODE	NUMBER	REV.
A	ML	DP12-B	D

DIST.

DEC FORM NO. DRA 103

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LEGEND

NUMBER	DIM "A"	TOLERANCE
BCØIA-5	5 FT	± 2 IN
BCØIA-10	10 FT	± 3 IN
BCØIA-15	15 FT	± 4 IN
BCØIA-20	20 FT	± 5 IN
BCØIA-25	25FT	± 6 IN
BCØIA-30	30 FT	± 7 IN
BCØIA-35	35 FT	± 8IN
BCØIA-40	40 FT	± 10 IN
BCØIA-45	45 FT	± 11 IN
BCØIA-50	50 FT	± 12IN

WIRE TABLE

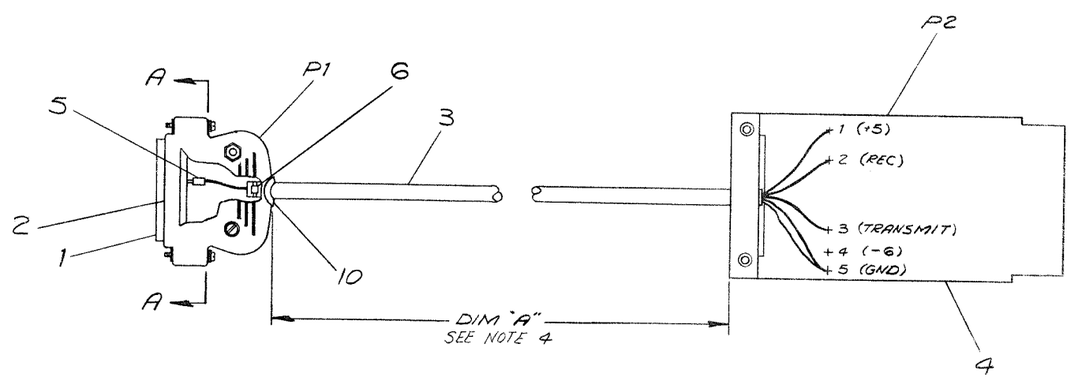
ITEM NO	DESCRIPTION AWG	DESCRIPTION COLOR	FROM CONNECTION	FROM WITH	TO CONNECTION	TO WITH
3	#22	BLK	P1-1	S-SOLDER	P2-5	SOLDER
3	#22	RED	P1-2	S-SOLDER	P2-3	SOLDER
3	#22	GRN	P1-3	S-SOLDER	P2-2	SOLDER
3	#22	ORN	P1-7	S-SOLDER	P2-5	SOLDER
3	#22	WHT	P1-20	S-SOLDER	P2-1	SOLDER

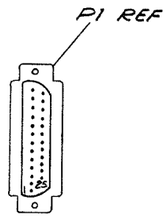
NOTES:

1. EACH SOLDERED CONNECTION ON P1 SHALL BE INSULATED WITH A 1/4 INCH PIECE OF HY-SHRINK TUBING (#5)
2. APPLY TAPE (#9) BETWEEN CABLE (#3) AND BOARD (#4) THEN SOLDER. ASSEMBLE CLAMP (#8) & EYELETS (#7) TO BOARD AFTER SOLDERING.
3. ~~VARIATIONS AND LENGTHS SHOWN IN LEGEND ARE STANDARD OTHER THAN STANDARD. VARIATIONS WILL BE SPECIFIED BY ALPHANUMERIC DESIGNATION. FOR LENGTHS OTHER THAN FOOT INCREMENTS FROM ONE (1) FOOT THRU NINE (9) FEET, ELEVEN (11) INCHES.~~

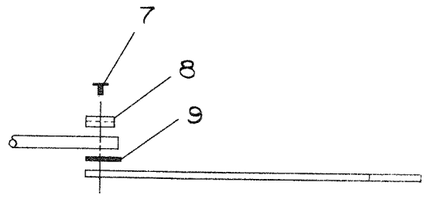
   ~~A = 1" G = 7"~~
   ~~B = 2" H = 8"~~
   ~~C = 3" J = 9"~~
   ~~D = 4" K = 10"~~
   ~~E = 5" L = 11"~~
   ~~F = 6"~~

   ~~EXAMPLE: BCØ2X-5D = 5'4"~~
   ~~LENGTHS WILL BE IN FOOT INCREMENTS FROM TEN (10) FEET ON. AND WILL BE SPECIFIED BY THE CORRESPONDING NUMERICAL DESIGNATION~~
   ~~EXAMPLE: BCØ2X-11 = 11 FEET~~
   ~~THE TOLERANCE ON DIMENSION "A" WILL BE ± 2 % OF THE FOOT INCREMENT.~~
4. CABLE TO BE CUT TO DIM "A" + 8 INCHES





SECTION A-A



QTY.	DESCRIPTION	PART NO.	ITEM NO.
1	GROMMET #809 A.I.R.	9007668	10
A/R	TAPE #4032 1/2 x 1 3/4 YDS (3M CO)	9007834-0-0	9
1	CABLE CLAMP	1208704	8
2	EYELET #GS-4-7 STIMPSON	9006732	7
1	TIE WRAP PANDUIT #SST-1B	9007031	6
4	HEAT SHRINK TUBING 1/8 DIA	9107255	5
1	M850 CABLE CONN	M850	4
A/R	CABLE, BELDEN 5 COND	9107680	3
1	PLUG CINCH HOOD #DBS/22G-1	1205885	2
1	PLUG CINCH DB-25P	1205886	1

PARTS LIST

REVISIONS	CHK	CHANGE NO.	REV.
	DAB	BCØIA-00001	A
	aes	BCØIA-00003	B

FIRST USED ON OPTION/MODEL: BCØ1A

DO NOT SCALE DRAWING
UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINAL SURFACE QUALITY
REMOVE BURRS AND BREAK SHARP CORNERS
MATERIAL
FINISH
NEXT HIGHER ASSY

		DATE
DRN.	Rick Lyon	2-5-69
CHK'D	Jim Weston	2/6/69
ENG.		DATE
PROJ. ENG.		DATE
PROD		DATE
SCALE		
SHEET	1 OF 1	

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: LEVEL CONVERTER (BI POLAR)

SIZE	CODE	NUMBER	REV.
D	IA	BCØIA-Ø-Ø	B

DIST. G

DEC FORM NO. DRD 100

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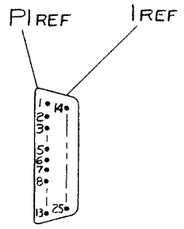
LEGEND	
NUMBER	"A" DIM
BCØ1J-1Ø	10' ± 2"
BCØ1J-25	25' ± 5"

WIRE TABLE

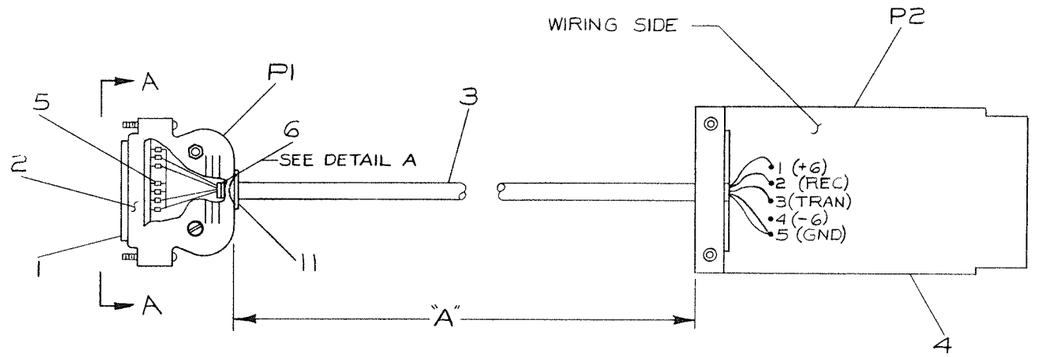
ITEM NO.	DESCRIPTION AWG	COLOR	FROM CONNECTION	TO CONNECTION	REMARKS
3		BLK	P1-7	P2-5	
3		GRN	P1-2	P2-2	
3		RED	P1-3	P2-3	
3		BRN	P1-1	P2-5	
10	22		P1-5	P1-6	JUMPER
10	22		P1-6	P1-8	JUMPER
3		WHT	P1-5	P2-1	

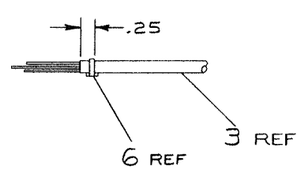
NOTES:

1. ALL WIRE TERMINATIONS IN P1 ARE TO BE INSULATED WITH A .25 INCH PIECE OF TUBING (ITEM #5).
2. APPLY TAPE (ITEM #9) BETWEEN CABLE (ITEM #3) AND BOARD (ITEM #4), ALSO BETWEEN CLAMP (ITEM #8) AND CABLE.

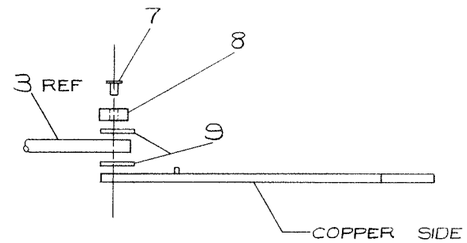


VIEW A-A
SCALE: NONE





DETAIL A



QTY.	DESCRIPTION	PART NO.	ITEM NO.
1	GROMMET	9007668	11
A/R	22 AWG BUS WIRE	9107560-01	10
A/R	TAPE, "4032, .03 THK x .50W	9007834	9
1	CABLE CLAMP	1202704	8
2	EYELET, "GS-4-7, STIMPSON	9006732	7
1	TIE WRAP, PANDUIT "SST-1B	9007031	6
A/R	HIGH SHRINK TUBING, WHT, .12 IN	9107255	5
1	EIA LEVEL CONVERTER	M850	4
A/R	CABLE, BELDON, 5 COND	9107630	3
1	CANNON PLUG HOOD "DB51226-1	1205885	2
1	CANNON CONNECTOR DE-19604-433 (DBM25S)	1204975	1

PARTS LIST

FIRST USED ON OPTION/MODEL: LT37

DO NOT SCALE DRAWING
UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
~~DECIMALS FRACTIONS ANGULAR~~
~~± .005 ± 1/64 ± 0°30'~~
FINAL SURFACE QUALITY 125 RP
REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL

FINISH

DRN. W.F. McCarthy	DATE 5/6/70	
CHK'D.	DATE 5-20-70	
ENG.	DATE 5/12/70	
PROJ. ENG.	DATE 5/20/70	
PROD.	DATE 5/20/70	
NEXT HIGHER ASSY D-UA-LT37-Ø-Ø		
SCALE NONE		
SHEET 1 OF		

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE: LEVEL CONVERTER (BI POLAR)

SIZE D | CODE 1A | NUMBER BCØ1J-Ø-Ø | REV.

DIST.

REVISIONS | REV. | CHANGE NO. | CHK.

DEC FORM NO. DRD 100

MASTER DRAWING LIST

MAINTENANCE MANUALS NO.	TITLE	UNIT VARIATIONS: KP12-Ø
KP12-Ø	POWERFAIL/RESTART	X

USED ON OPTIONS

EP12							

REVISIONS

REV.	DATE	CHG. NO.	APP'D.
A	8/71	MISC-86	ncs

DRN. J. APREA	DATE 3-7-69
CHK'D. R. HUTNAK	DATE 3-7-69
ENG. GALE	DATE 3-10-69
PROJ. ENG. GALE	DATE 3-10-69
PROD. D. CALL	DATE 3-10-69
FIRST USED ON PDP12	
SCALE ~~—~~	
SHEET 1 OF 2	

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE POWER FAIL/RESTART

SIZE	CODE	NUMBER	REV.
A	ML	KP12-Ø	A

DIST.

PRINT SET KP12-Ø	DWG. NO.	REV. LET.	NO. OF SHEETS	TITLE	OPTION NO.
X	D-BS-KP12-Ø-PWF		1	PWF POWER FAIL/RESTART	
—	K-WL-EP12-0-3	REF		WIRELIST	

TITLE POWER FAIL/RESTART

SHEET 2 OF 2

SIZE	CODE	NUMBER	REV.
A	ML	KP12-Ø	A

DRA 132

DEC 16-(325)-1048-1-N471

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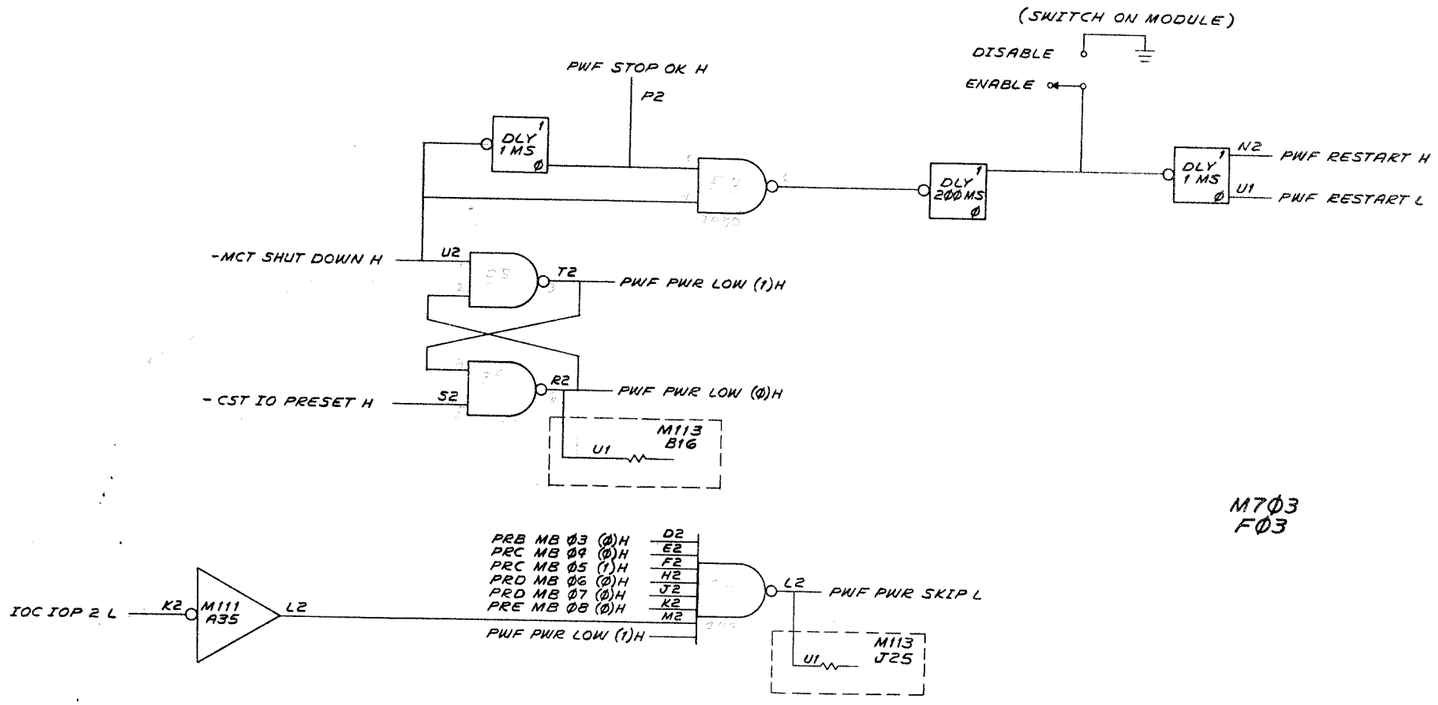

REVISIONS

REV.	CHANGE NO.	CHK

DEC FORM NO. DRD 102A

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

UNLESS OTHERWISE SPECIFIED

UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINAL SURFACE QUALITY / REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL

FINISH

DRN		DATE 2-11-69
CHK		DATE 2/27/69
ENG	R.J. Clayton	DATE 2-28-69
PROJ. ENG.		DATE 2-28-69
PROD.		DATE 2/27/69

FIRST USED ON
KP12

SCALE

SHEET 1 OF 1

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
POWER FAILURE/ RESTART

SIZE	CODE	NUMBER	REV.
D	85	KP12-Ø-PWF	

DIST.

MASTER DRAWING LIST

MAINTENANCE MANUALS NO.	TITLE	UNIT VARIATIONS KW12-A	KW12-B	KW12-C
KW12-Ø	CLOCK OPTION	X	X	X

USED ON OPTIONS							
PDP 12							

REVISIONS	REV.	DATE	CHG. NO.	APP'D.
	ORIG	8/71	MISC-86	—
	A	12/71	EM12-55	D.M.
	B	6/72	EM12-57	

DRN. APEA	DATE 3-7-69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. R. HUTANK	DATE 3-7-69	
ENG. GALE	DATE 3-10-69	TITLE: CLOCK
PROJ. ENG. GALE	DATE 3-10-69	
PROD. CALL	DATE 3-10-69	
FIRST USED ON: PDP12		SIZE A · CODE ML · NUMBER KW12-Ø · REV. B
SCALE #		DIST.
SHEET 1 OF 2		

PRINT SET KW12-Ø	DWG. NO.	REV. LET.	NO. OF SHEETS	TITLE	OPTION NO.
X	D-BS-KW12-Ø-CLC	E	1	CLC CLOCK IO CONTROL	
X	D-BS-KW12-Ø-CLEA	E	1	CLEA INPUT CHANNEL 1	
X	D-BS-KW12-Ø-CLEB	D	1	CLEB INPUT CHANNEL 2	
X	D-BS-KW12-Ø-CLEC	D	1	CLEC INPUT CHANNEL 3	
X	D-BS-KW12-Ø-CLIO	B	1	CLIO CLOCK TO INPUT	
X	D-BS-KW12-Ø-CLKA		1	CLKA CLOCK AND BUFFER 00-05	
X	D-BS-KW12-Ø-CLKB		1	CLKB CLOCK AND BUFFER 06-11	
X	D-BS-KW12-Ø-CLR	E	1	CLR CLOCK RATE	
X	D-BS-KW12-Ø-CLTB	A	1	CLTB CLOCK TIME BASE	
X	D-CS-7006335-0-1	C	1	CLOCK CONTROL CIRCUIT SCHEMATIC	
X	D-AD-7006335-0-0	E	2	CLOCK CONTROL PANEL ASSEMBLY	
X	A-PL-7006335-0-0	E	2	CLOCK CONTROL PANEL ASSEMBLY (PL)	
X	A-PL-KW12-Ø-Ø	A	1	KW12 CLOCK CONTROL	
X	A-SP-KW12-Ø-1	A	8	KW12 REAL TIME CLOCK	
X	D-BS-KW12-Ø-CLUB	B	1	SIMPLE CLOCK	
X	A-SP-KW12-B-1		1	ENGINEERING SPECIFICATION	
—	K-WL-EM12-0-3	REF		WIRELIST	

TITLE		SIZE	CODE	NUMBER	REV.
CLOCK	SHEET 2 OF 2	A	ML	KW12-Ø	B

DRA 132

DEC 16 (325)-1048-1-N471

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY [illegible] DATE 12-17-69	CHECKED W Sutherland DATE 12-17-69	SECTION
ENG L. Gallo DATE 12/10/69	PROD D. Call DATE 12-18-69	ISSUED SECT.

ITEM NO.	DWG NO./PART NO. CL BASIC VAR.	DESCRIPTION	QTY/VAR KW12-A	KW12-B	KW12-C		UNIT COST		UNIT QUANTITY	QUANTITY ISSUED
	M503	Schmidt Trigger & PA	3							
	M719	Super Clock Synchronizer	3							
	M405	Crystal Clock	1		1					
	M216	Six Flip Flop	2							
	M217	Clock Counter Buffer	3							
	M623	Bus Driver	1							
	M103	Device Selector	1	1	1					
	M304	Pulse Amplifier	2							
	M117	NAND Gate	1							
	M115	NAND Gate	1							
	M113	NAND Gate	2	1	1					
	M617	Four Input Power NAND Gate	1							
	D-AD-7006335-0-0	Clock Control Panel	1							
	1203185-2	Power Supply (for PDP-12C only)	1							
	C-AD-7006045-0-0	Power Supply Bracket Assembly (12C only)	1							
	M870	Simple Clock		1	1					
	M401	Variable Clock		1						

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV	ECO NO.
(KW12) Clock Control	SHEET 1 OF 1	A	PL	KW12-Ø-Ø	A	EM12-00041
		DIST.				

DEC FORM NO 16 1027
DRA 123

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IOC IOP 1 L — M113 D29 P2, R2 — S2
+3V D29U1 H
CLC IOC IOP 1 H — M103 D25 P2 — B1 CLC IOP 1 L, A1 CLC IOP 1 H

IOC IOP 2 L — M113 D29 T2, U2 — V2
CLC IOC IOP 2 H — M103 D25 R2 — D1 CLC IOP 2 L, C1 CLC IOP 2 H

IOC IOP 4 L — M113 D29 H2, J2 — K2
CLC IOC IOP 4 H — M103 D25 S2 — F1 CLC IOP 4 L, E1 CLC IOP 4 H

PRB MB Ø3 (Ø)H, PRC MB Ø4 (Ø)H, PRC MB Ø5 (1)H, PRD MB Ø6 (Ø)H, PRD MB Ø7 (1)H, PRE MB Ø8 (1)H — D2, E2, F2, H2, J2, K2, L2, N2 — M103 D25 U2 — V2 CLC IOT SELECT H
V1 M113 D29

CLC IOP 1 H, PRE MB Ø9 (1)H, PRF MB 1Ø (Ø)H — N2, P2, R2 — M115 C27 S2 — CLC EN STATUS TO AC L

CLC IOP 4 H, PRF MB 1Ø (Ø)H, PRF MB 11 (1)H — T2, U2, V2 — M115 D23 V1 — CLC CLR STATUS L

CLC IOP 1 H, PRE MB Ø9 (Ø)H, PRF MB 1Ø (1)H — A1, B1, C1, D1 — M617 D17 E1 — CLC CLR BUF L

CLC IOP 4 H, PRF MB 1Ø (Ø)H, PRF MB 11 (Ø)H — K1, L1, M1 — M115 D23 N1 — F1 — M617 D17 L1 — CLC LD CTRL 2 H

CLC IOP 2 H, PRE MB Ø9 (Ø)H, PRF MB 11 (1)H — P1, R1, S1 — M115 D23 U1 — M1 — M617 D17 S1 — CLC AC TO BUF H

CLC IOP 4 H, PRF MB 1Ø (1)H — D2, E2 — M113 D24 F2 — D2, E2, F2, H2 — M617 D17 J2 — CLC BUF TO AC H

IOC IO PRESET L — D1 — M719 F2Ø E1 — CLC CLOCK PRESET H
+3 D29U1 H — K2, L2, M2, N2 — M617 D17 P2 — CLC CLOCK PRESET L

PRE MB Ø9 (1)H, CLC IOP 2 H — P2, R2 — M113 D24 S2

D1 — D 1 CLC IO SYNC M216 F19 C Ø — E1
C1 — CLC IOP 4 L — B1
A1 — CLC CLOCK PRESET L
F1

P1, R1 — M113 D29 — S1 — D2, D1 — PA M3Ø4 D27 F1, H1 — B1
- CLC SYNC STROBE 2 H
CLC CLOCK PRESET L — L1, M1 — M113 D29 N1 — E2 — M719 F2Ø D2 — D1 — M719 F21 E1 — CLC SYNC STROBE 1 H
CLC SYNC STROBE 1 L

M719 F2Ø U1 — 18K — +5V
B2

E1, E2 — PA M3Ø4 D27 J1, K1, K2 — +5V D27 H
CLC SYNC STROBE 2 H
CLC SYNC STROBE 2 L

CLC IOP 2 H, PRE MB Ø9 (Ø)H, PRF MB 11 (Ø)H — D2, E2, F2 — M115 D23 H2 — D1, D2 — PA M3Ø9 D28 F1, H1 — B1 — +5V D28 H
CLC LD CTRL 1 H
CLC LD CTRL 1 L

CLC IOP 4 H, PRF MB 1Ø (1)H, PRF MB 11 (1)H — J2, K2, L2 — M115 D23 M2 — R2 — MG17 D17 V2 — CLC CNT TO BUF H
CLEA CNT TO BUF L, CLEB CNT TO BUF L, CLEC CNT TO BUF L — S2, T2, U2

L2, M2 — M113 D24 N2 — S1, S2 — PA M3Ø4 D27 L1, M1 — L2 — +5V D27 H
CLR MODE 2 (1)H
CLC CLR CNT H
CLC CLR CNT L

CLC SYNC STROBE 2 L, CLR MODE 1 (1)L — S2, V1 — M719 F2Ø T2 — CLC STROBE EVENTS H

REVISIONS	REV.	A									
	CHANGE NO.	00001	EM12-00017	EM12-00019	EM12-00041	EM12-00057					
	CHK		B	C	D	E					
		L. GALE 4/24/68	L. GALE 11-5-68	L. GALE 11-4-69	L. GALE 12-31-69	D. MACKLIN 10/2/70	MACKLIN 6-7-72				

DEC FORM NO. DRD 102A

QTY.	DESCRIPTION	PART NO.	ITEM NO.
	PARTS LIST		

UNLESS OTHERWISE SPECIFIED
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINAL SURFACE QUALITY √
REMOVE BURRS AND BREAK SHARP CORNERS
MATERIAL
FINISH

DRN. Joe Arua DATE 1-28-69
CHKD. J. Scanlon DATE 2/2/69
ENG. DATE 2/28/69
PROJ. ENG. DATE 2/28/69
PROD. DATE 2/28/69
FIRST USED ON KW12

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE
CLC
CLOCK IO CONTROL

SIZE D | CODE 85 | NUMBER KW12-Ø-CLC | REV. E
DIST.

SIZE D 85 | NUMBER KW12-Ø-CLC | REV E

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M5Ø3
F23

G783
F25

C2
B1
A1
L1
H2
H1
J2
ST
P2
S2
PA
S1
T2

F2 — HQ GND
E2 — +15 HQ
A2 — +5
D2 — -15 HQ

CLEA EN INPUT 1 (1)H

CLC LD CTRL 1 H — F2
CLC STROBE EVENTS H — K2
PRD AC Ø7 (1)H — H2
CLEA PRE EVENT 1 (Ø)H
CLEA EVENT 1 (1)H

L2 — CLEA STROBE EVENT 1 L

F1

D 1 / C Ø — CLEA INPUT 1 — R1

D 1 — CLEA PRE EVENT 1 (1)H
C Ø — R2 CLEA PRE EVENT 1 (Ø)H

E2 — M111 D21 — F2 — L1 — M1 — M1Ø3 D25 — N1 — CLEA CNT TO BUF L

CLR RATE Ø (Ø)L — H1
CLR RATE 1 (Ø)L — J1
M1Ø3 D26 — K1 — -CLEA EXT RATE H — N1

D 1 / C Ø — CLEA EVENT 3 — M1

CLC SYNC STROBE 1H — J2

CLC CLR STATUS L — S1

U2 — CLEA INT REQ L

PRD AC Ø6 (1)H — K1

D 1 / C Ø — Z1 — CLEA EN INPUT 1 (1)H / CLEA EN INPUT 1 (Ø)H

CLC LD CTRL 2 H — J1

D 1 / C Ø — V2 — CLEA EN EV 1 INT (1)H / CLEA EN EV 1 INT (Ø)H

CLC CLOCK PRESET H — P1

M719
F2Ø

REVISIONS	CHANGE NO.	REV.
CHK	00001	A
	00002	B
	EM12-00015	C
	EM12-00030	D
	EM12-00055	E

DEC FORM NO. DRD 102A

UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
DECIMALS FRACTIONS ANGLES
± .005 ± 1/64 ± 0°30'
FINAL SURFACE QUALITY
REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL

FINISH

		DATE
DRN.	Jeff Strang	2-1-69
CHKD.	J Scanlon	2/27/69
ENG.	L. Gale	2/28/69
PROJ. ENG.	L. Gale	2/28/69
PROD.	W Wall	4/28/69

FIRST USED ON
KW12

SCALE

SHEET 1 OF 1

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
CLEA
INPUT CHAN 1

SIZE	CODE	NUMBER	REV.
D	BS	KW12-Ø-CLEA	E

DIST.

SIZE CODE D BS NUMBER KW12-Ø-CLEA REV E

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G783 F25

H1 E1 M1 K2 K1 L2 ST R2 U2 PA R1 V2

MSØ3 F23

D2 +15V HQ
A2 +5
E2 -15V HQ
F2 HQ GND

CLC LD CTRL 1 H F2
CLC STROBE EVENTS H K2
PRE AC Ø9 (1)H H2
CLEB PRE EVENT 2 (Ø)H
CLEB EVENT 2 (1)H
CLC SYNC STROBE 1 H J2
CLC CLR STATUS L S1
PRE AC ØB (1)H K1
CLC LD CTRL 2 H J1
CLC CLOCK PRESET H P1

F1
L2 CLEB CNT TO BUF L
CLEB CLEA EN INPUT 2 (1)H

D 1 CLEB INPUT 2 C Ø R1

D 1 CLEB PRE EVENT 2 (1)H
C Ø R2 CLEB PRE EVENT 2 (Ø)H

+3V D24V1 H N1

D 1 CLEB EVENT 2 C Ø M1

U2 CLEB INT REQ L

D 1 CLEB EN INPUT 2 (1)H
C Ø L1 CLEB EN INPUT 2 (Ø)H

D 1 V2 CLEB CLEA EN EV 2 INT (1)H
C Ø CLEB CLEA EN EV 2 INT (Ø)H

M719 F21

REVISIONS	REV.	CHK	CHANGE NO.
	A		00001 L. GALE 4/24/68
	B		00002 T. Butler L. GALE 6/18/68
EM12-00015	C		L. GALE 10/7/69
EM12-00055	D		R. MOORE 1-3-72

DEC FORM NO. DRD 102A

UNLESS OTHERWISE SPECIFIED	DRN.	DATE 1-31-69
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30' FINAL SURFACE QUALITY REMOVE BURRS AND BREAK SHARP CORNERS	CHK'D	DATE 2/27/69
	ENG	DATE 2/28/69
	PROJ. ENG.	DATE 2/28/69
	PROD.	DATE 2/28/69
MATERIAL	FIRST USED ON KW12	
FINISH	SCALE	
	SHEET 1 OF 1	

QTY.	DESCRIPTION	PART NO.	ITEM NO.
	PARTS LIST		

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: CLEB INPUT CHAN 2

SIZE	CODE	NUMBER	REV
D	BS	KW12-Ø-CLEB	D

DIST.

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K1 J1 N1 C1 D1

H2 H1 J2 E1 +6.2V D1 -6.2V

ST P2 S2 PA S1 T2

G783 F25

M5Ø3 F24

D2 +15 HQ
E2 -15 HQ
A2 +5
F2 HQ GND

CLC LD CTRL 1 H F2

CLC STROBE EVENTS H K2

PRF AC 11 (1)H H2

CLEC PRE EVENT 3 (Ø)H

CLEC EVENT 3 (1)H

F1

CLEC CLEA EN INPUT 2 (1)H

L2 CLEC CNT TO BUF L

D 1 CLEC INPUT 3 C Ø R1

CLC SYNC STROBE 1 H J2

CLC CLR STATUS L S1

PRF AC 1Ø (1)H K1

CLC LD CTRL 2 H J1

CLC CLOCK PRESET H P1

D 1 ENABLE C Ø L1

CLEC EN INPUT 3 (1)H

CLEC EN INPUT 3 (Ø)H

D 1 PRE-EVENT C Ø R2

CLEC PRE EVENT 3 (1)H

CLEC PRE EVENT 3 (Ø)H

+3V D24V1 H N1

D 1 V2 C Ø

CLEC EN EV 3 INT (1)H

CLEC EN EV 3 INT (Ø)H

D 1 CLEC EVENT 3 C Ø M1

U2 CLEC INT REQ L

M719 F22

REVISIONS	CHK	CHANGE NO.	REV.
	DWB	00001	A
D Minot L. GALE 4/24/68			
L. Gale 6/18/68	DWB	00002	B
T. Rullo L. GALE			
L. Gale 6/18/68	DWB	EM12-00015	C
John Mains 10-8-68			
L. GALE 10/31/68			
L. Gale 11/1/68			
EM12-00055			D
R. MOORE 1-3-72			
R. Moore 1-24-72			

DEC FORM NO. DRD 102A

UNLESS OTHERWISE SPECIFIED
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES
TOLERANCES DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINAL SURFACE QUALITY REMOVE BURRS AND BREAK SHARP CORNERS
MATERIAL
FINISH

DRN.		DATE 2-1-69
CHKD		DATE 2/6/69
ENG.		DATE 2/28/69
PROJ. ENG.		DATE 2/28/69
PROD.		DATE 3/24/69

FIRST USED ON KW12

SCALE

SHEET 1 OF 1

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE

CLEC INPUT CHAN 3

SIZE	CODE	NUMBER	REV.
D	BS	KW12-Ø-CLEC	D

DIST.

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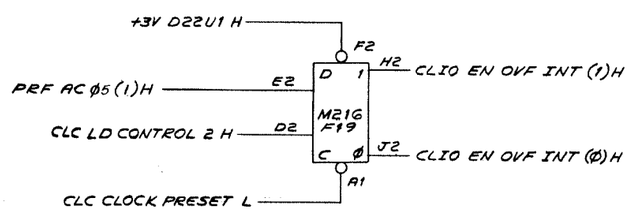

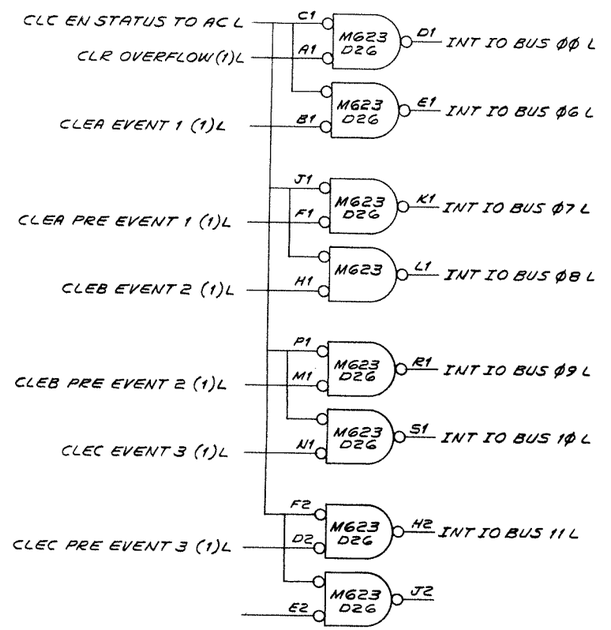

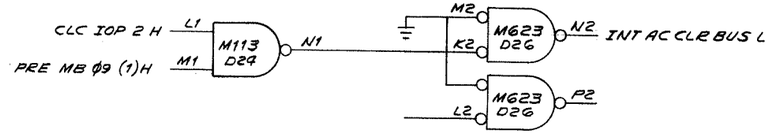

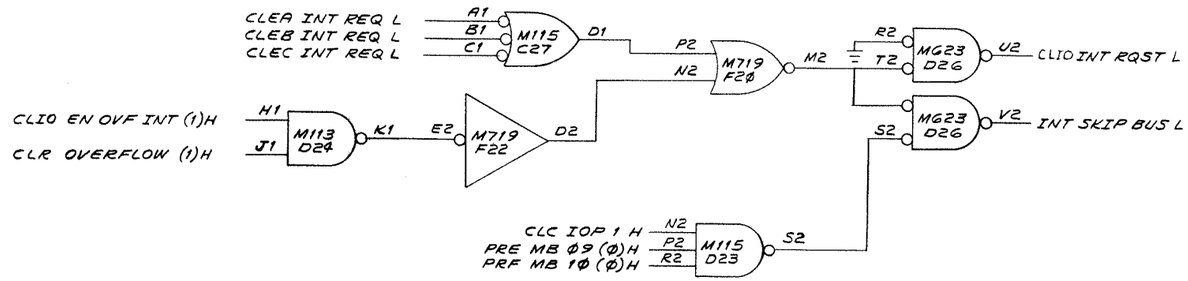

REVISIONS	REV.
CHK	A
CHANGE NO.	00002
T. Quilling	
L GALE	
EM12-00047	B
SCANLAN	

DEC FORM NO. DRD 102A

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

UNLESS OTHERWISE SPECIFIED
UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINAL SURFACE QUALITY / REMOVE BURRS AND BREAK SHARP CORNERS
MATERIAL
FINISH

DRN.	Joe Ajoya	DATE 1-29-69
CHKD.	Scanlan	DATE 2/27/69
ENG.	Gale	DATE 2/28/69
PROJ ENG.	Gale	DATE 2/28/69
PROD.	N Call	DATE 3/4/69

FIRST USED ON KW12
SCALE
SHEET / OF /

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE
CLIO
CLOCK IO INPUT

SIZE	CODE	NUMBER	REV.
D	85	KW12-Ø-CLIO	B

DIST.

NUMBER KW12-Ø-CLIO | SIZE D | CODE 85 | REV B

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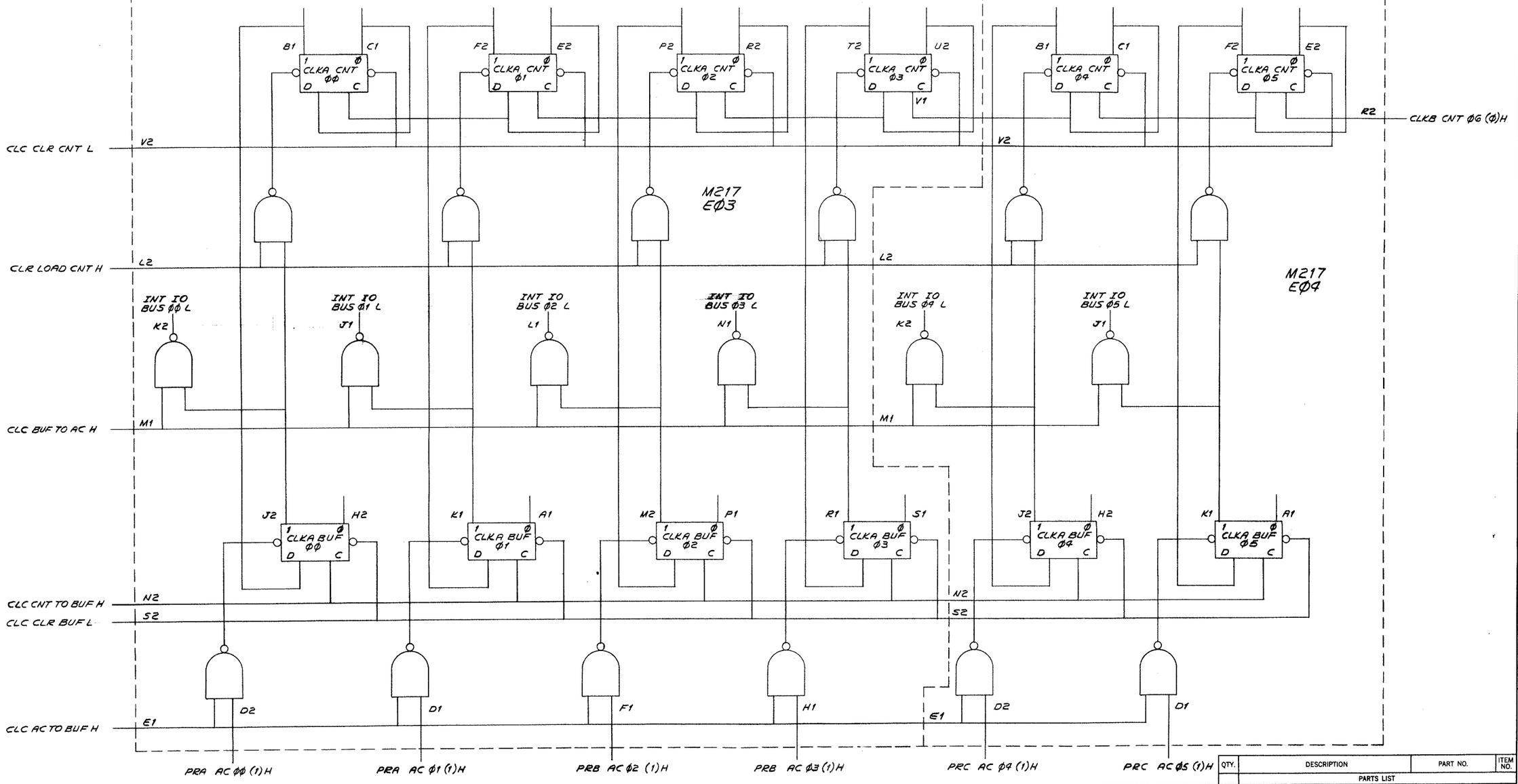

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

UNLESS OTHERWISE SPECIFIED

UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 | FRACTIONS ± 1/64 | ANGLES ± 0°30'
FINAL SURFACE QUALITY / REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL

FINISH

DRN.	Joe Agnew	DATE 1-31-69
CHK'D.	D Hanlon	DATE 2/21/69
ENG.	L Gale	DATE 2/28/69
PROJ. ENG.	L Gale	DATE 2/28/69
PROD.	D Cull	DATE 3/5/69

FIRST USED ON KW12

SCALE

SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE
CLKA
CLOCK & BUFFER
ØØ - Ø5

SIZE	CODE	NUMBER	REV.
D	85	KW12-Ø-CLKA	

DIST.

REVISIONS | REV. | CHANGE NO. | CHK

FORM NO. 102A

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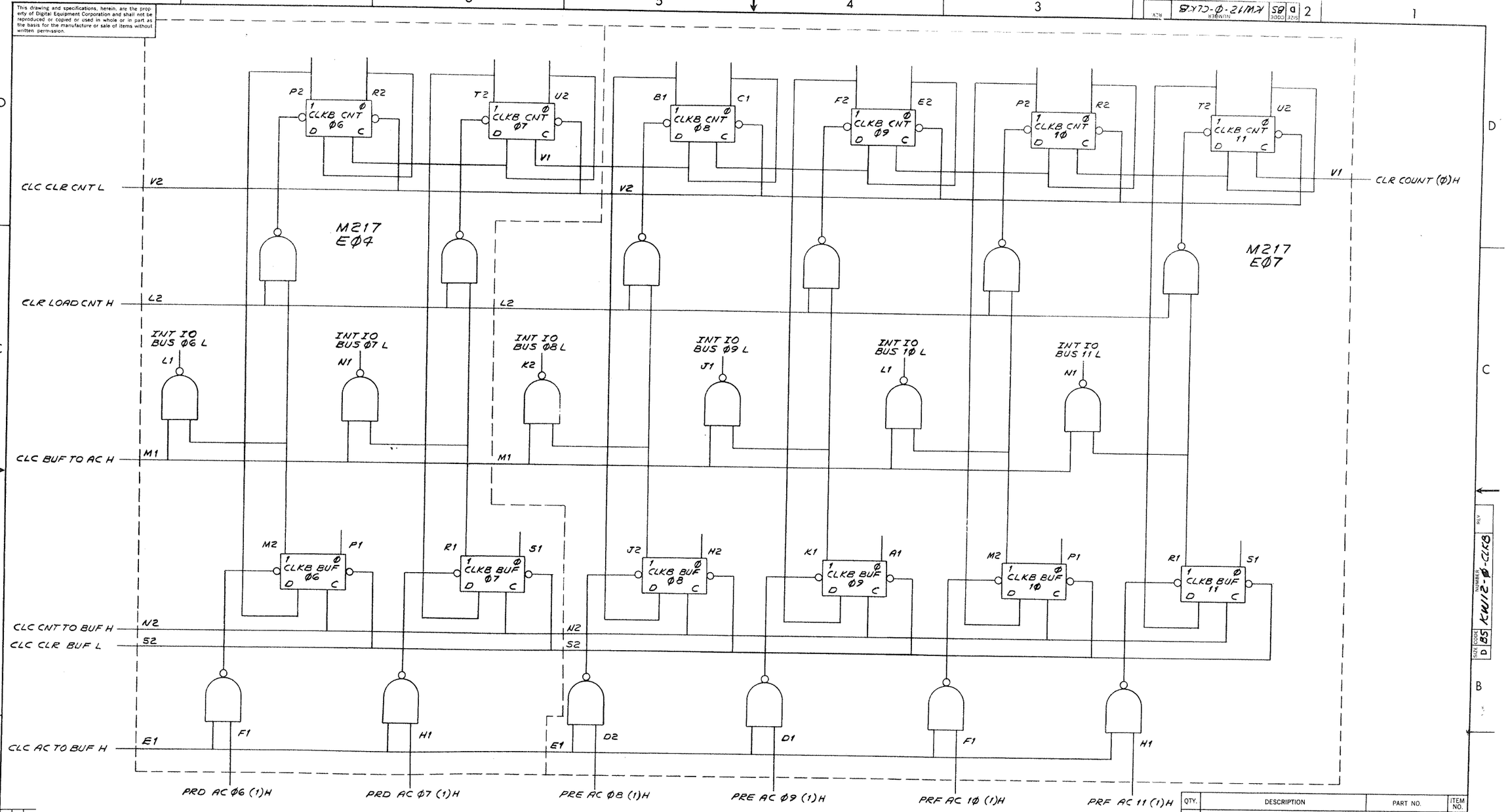

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

REVISIONS	REV.	CHANGE NO.	CHK

UNLESS OTHERWISE SPECIFIED
UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINAL SURFACE QUALITY
REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL

FINISH

DRN.	DATE	1-31-69
CHK'D.	DATE	2/27/69
ENG.	DATE	2/28/69
PROJ. ENG.	DATE	2/28/69
PROD.	DATE	2/28/69

FIRST USED ON KW12

SCALE

SHEET 1 OF 1

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
CLKB
CLOCK & BUFFER
Ø6-11

SIZE	CODE	NUMBER	REV.
D	BS	KW12-Ø-CLKB	

DIST.

DEC FORM NO. DRD 102A

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+3V D22V1 H

PRA AC ØØ (1)H

CLC LD CTRL 1 H

CLC CLOCK PRESET L

PRA AC Ø1 (1)H

PRB AC Ø2 (1)H

PRB AC Ø3 (1)H

PRC AC Ø4 (1)H

PRC AC Ø5 (1)H

M216 CLR RATE Ø M216 EØ9 C Ø

M216 CLR RATE 1 M216 EØ9 C Ø

M216 CLR RATE 2 M216 EØ9 C Ø

M216 CLR MODE Ø M216 EØ9 C Ø

M216 CLR MODE 1 M216 EØ9 C Ø

M216 CLR MODE 2 M216 EØ9 C Ø

M117 D22 +3V D22U1 H

M117 D22 +3V D22V1 H

CLR RATE Ø (Ø)H
CLR RATE 1 (Ø)H
CLR RATE 2 (1)H
-CLTB ØØØK HERTZ H

CLR RATE Ø (Ø)H
CLR RATE 1 (1)H
CLR RATE 2 (Ø)H
- CLTB 1ØØK HERTZ (Ø) H

CLR RATE Ø (Ø)H
CLR RATE 1 (1)H
CLR RATE 2 (1)H
-CLTB 1ØK HERTZ H

CLR RATE Ø (1)H
CLR RATE 1 (Ø)H
CLR RATE 2 (Ø)H
-CLTB 1K HERTZ H

CLR RATE Ø (1)H
CLR RATE 1 (Ø)H
CLR RATE 2 (1)H
-CLTB 1ØØ HERTZ H

CLR RATE Ø (1)H
CLR RATE 1 (Ø)H
CLR RATE 2 (Ø)H
CLEA PRE EVENT 1 (Ø) H

M117 D22 · M115 D23 · M719 F22 · M719 F21 · M111 D21 · M719 F21 · M719 F21 · M216 F19 · M113 D24 · M216 A10 · M719 F22 · M719 F22 · M719 F22 · M216 A10 · M719 F21 · M115 D23 · M117 D22 · M113 D24 · M3Ø4 D27 · M623 D26 · M117 D17 U1

PRA AC ØØ (1)H

CLC CLR STATUS L

+3V D22U1 H

CLC CLR CNT L

CLKA CNT ØØ (Ø)H

CLR OVERFLOW (1)H

CLR OVERFLOW (Ø) H

CLC CLOCK PRESET H

CLC CLOCK PRESET L

+3VC23U1

CLC SYNC STROBE IH

CLC CLOCK PRESET L

+3VC23U1

CLC CLR CNT L

CLKA CNT ØØ(Ø)H

CLR EXT A-D START L

CLR CLOCK PRESET L

CLC LD CTRL 2 H

PRC AC Ø4 (1) H

P1 CLR EXT A-D START H

CLR MODE 1 (Ø) H

CLR MODE 2 (1) L

CLR LOAD CNT H

REVISIONS	REV.
CHK 2nd 00001	A
2nd EM12-00003	B
2nd EM12-00009	C
2nd EM12-00034	D
2nd EM12-00055	E

DEC FORM NO. DRD 102A

QTY.	DESCRIPTION	PART NO.	ITEM NO.
	PARTS LIST		

UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINAL SURFACE QUALITY
REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL

FINISH

DRN. DATE 1-24-69
CHK'D DATE 2/7/69
ENG. DATE 2/28/69
PROJ. ENG. DATE 2/28/69
PROD. DATE 3/4/69
FIRST USED ON KW12

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE
CLR
CLOCK RATE

SIZE D | CODE BS | NUMBER KW12-Ø-CLR | REV. E

SCALE

SHEET 1 OF 1

DIST.

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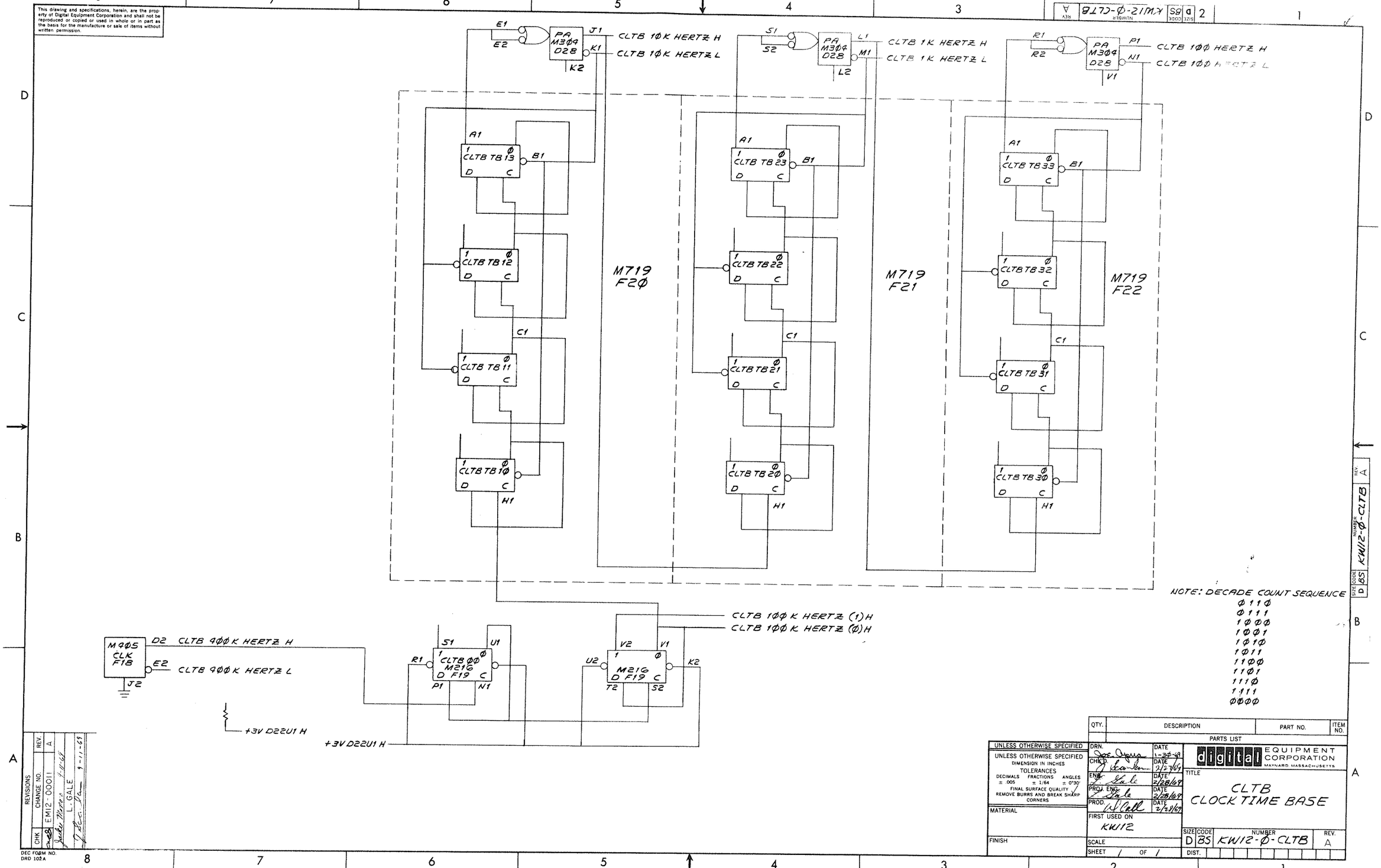

NOTE: DECADE COUNT SEQUENCE

Ø 1 1 Ø
Ø 1 1 1
1 Ø Ø Ø
1 Ø Ø 1
1 Ø 1 Ø
1 Ø 1 1
1 1 Ø Ø
1 1 Ø 1
1 1 1 Ø
1 1 1 1
Ø Ø Ø Ø

REVISIONS			
CHK	CHANGE NO.	REV.	
[illegible]	EM12-ØØØ11	A	
Judy Moore 1/1/68			
L. GALE 9-1-69			

QTY.	DESCRIPTION	PART NO.	ITEM NO.
	PARTS LIST		

UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINAL SURFACE QUALITY
REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL

FINISH

DRN.	Joe Dona	DATE 1-30-69
CHKD.	J Bowden	DATE 2/2/69
ENG.	L Gale	DATE 2/28/69
PROJ. ENG.	L Gale	DATE 2/28/69
PROD.	J Hall	DATE 2/28/69
FIRST USED ON	KW12	
SCALE		
SHEET / OF /		

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE
CLTB
CLOCK TIME BASE

SIZE	CODE	NUMBER	REV.
D	85	KW12-Ø-CLTB	A

DIST.

DEC FORM NO. DRD 102A

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NOTES:
1. ✳ SLOT F18 CONTAINS M4ØI FOR KW12B AND M4Ø5 KW12C.
2. FOR THE KW12B THE M4ØI WILL NOMINALLY BE SET TO THE RANGE 1.75KHZ TO 17.5 KHZ BY CONNECTING PINS N2-T2 AS SHOWN ON THE DRAWING. FREQUENCY IS VARIABLE WITHIN THE RANGE BY A POT. ADJUSTMENT ON M4ØI. OTHER FREQUENCY RANGES MAY BE HAD BY THE FOLLOWING:

	INTERCONNECTIONS REQ'D
1.5 MHZ TO 1ØMHZ	NONE (NOT RECOMMENDED)
175 KHZ TO 1.75 MHZ	F18N2 — F18R2
17.5 KHZ TO 175 KHZ	F18N2 — F18S2
1.75 KHZ TO 17.5 KHZ	F18N2 — F18T2
175 HZ TO 1.75 KHZ	F18N2 — F18P2

CLC IOP(4)L
M87Ø F-25
N2
D 1
C Ø
CLC IOP(2)L D2
IOC IO PRESET L K2
K2 J2
✳ F18
E2
D2
CLT B 400 KHZ H
N2 R2 S2 T2 P2
(CLK B 1.25 KHZ)
E2
D 1
C Ø
CLC IOP(1)H J2
INT SKIP BUS L
H2
CLIO INT RQST L
F2
CLC IOP(4)H M2
PRFMB 11(1)H L2

IOC IOP(1)L P2
+3V (D29U1) R2
M113 D29
S2
P2
MIØ3 D25
BI CLC IOP (1) L
AI CLC IOP (1) H
IOC IOP(2) L T2
U2
M113 D29
V2
R2
MIØ3 D25
DI CLC IOP (2) L
CI CLC IOP (2) H
IOC IOP (4) L H2
J2
M113 D29
K2
S2
MIØ3 D25
FI CLC IOP (4) L
EI CLC IOP (4) H
PRB MB Ø3 (Ø) H D2
PRC MB Ø4 (Ø) H E2
PRC MB Ø5 (1) H F2
PRD MB Ø6 (Ø) H H2
PRD MB Ø7 (1) H J2
PRE MB Ø8 (1) H K2
MIØ3 D25
V
U2
L2
N2
+3V (D29V1)
M113 D29 U1 +3V (D29U1)
M113 D29 V1 +3V (D29V1)

REVISIONS	REV.	CHK
CHANGE NO. EM12-00241	A	EV
CHANGE NO. EM12-00347	B	EV

D. MACKLIN 10/30/70
SCANLAN 3-7-71

DEC FORM NO. DRD 102A

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
KW12		PARTS LIST		

UNLESS OTHERWISE SPECIFIED
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINAL SURFACE QUALITY REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL
FINISH

DRN. K. Fontaine DATE 2/25/70
CHK'D. [illegible] DATE 3/5/70
ENG. [illegible] DATE 3/9/70
PROJ. ENG. [illegible] DATE 3/9/70
PROD. [illegible] DATE 3/12/70
NEXT HIGHER ASSY A-ML-KW12-B
SCALE
SHEET OF

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE SIMPLE CLOCK

SIZE D | CODE BS | NUMBER KW12-Ø-CLUB | REV. B
DIST.

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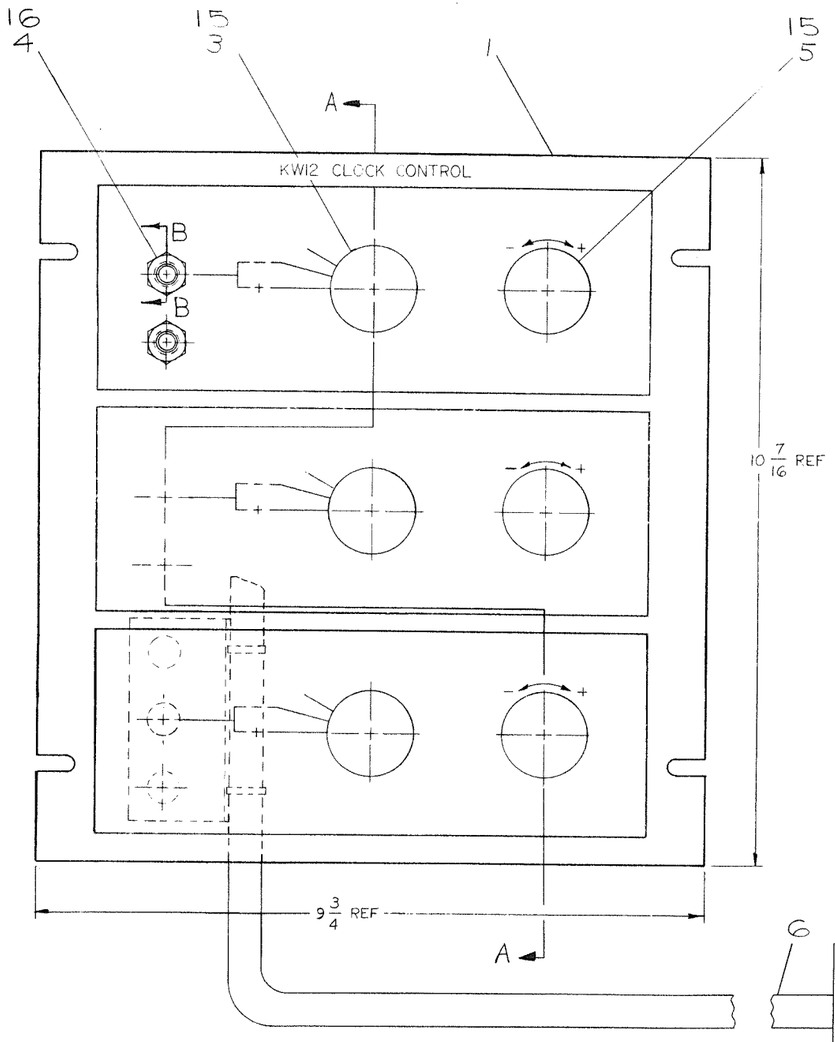
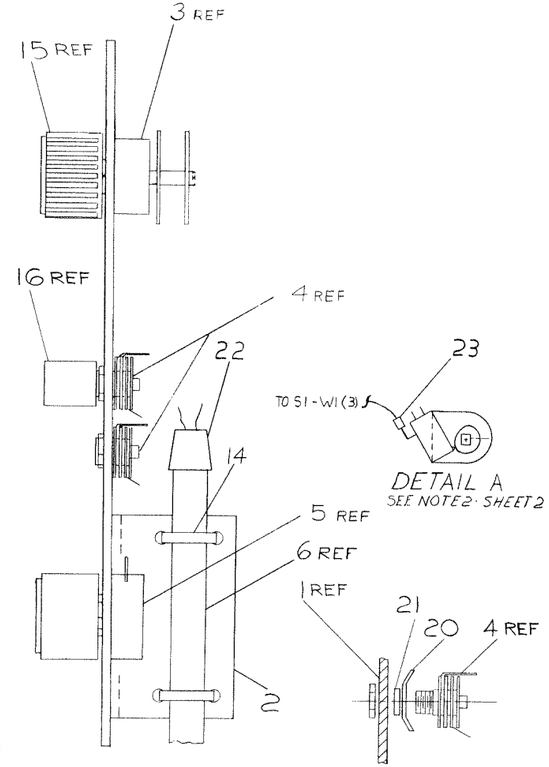
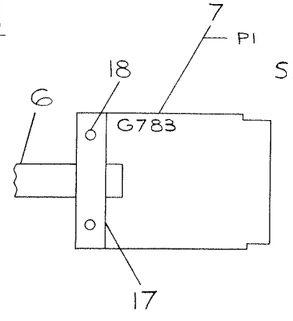
NOTES
1. TWIST DRAIN WIRES OF PAIR #2,5, AND 6 TOGETHER AND SOLDER TO GND LUG.





SECTION A-A

SECTION B-B



DETAIL A
SEE NOTE 2 SHEET 2

REVISIONS			
CHK	CHANGE NO.	REV.	
[illegible]	EM12-00013	A	L. GALE 6-1967
[illegible]	EM12-00014	B	T. Quadros 9-22-68
[illegible]	EM12-00020	C	T. Quadros 10-10-69 GALE
[illegible]	EM12-00045	D	T. Quadros 12-17-69 GALE
[illegible]	EM12-00050	E	J. Teicher 12-18-69
[illegible]			J. Teicher 3-26-71
[illegible]			G. Williams 7-11-71 R. IKNANIAN 7-23-71

DEC FORM NO. DRD 100

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
KW12		PARTS LIST		

UNLESS OTHERWISE SPECIFIED
UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINAL SURFACE QUALITY
REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL

FINISH

DRN. QUADROS	DATE	15 JUL 69
CHK'D. [illegible]	DATE	8/11/69
ENG. [illegible]	DATE	8/11/69
PROJ. ENG. [illegible]	DATE	8/11/69
PROD. [illegible]	DATE	8/14/69

NEXT HIGHER ASSY
A-ML-KW12-Ø

SCALE NONE

SHEET 1 OF 2

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
(KW12)CLOCK CONTROL PANEL

SIZE	CODE	NUMBER	REV
D	AD	7006335-0-0	E

DIST.

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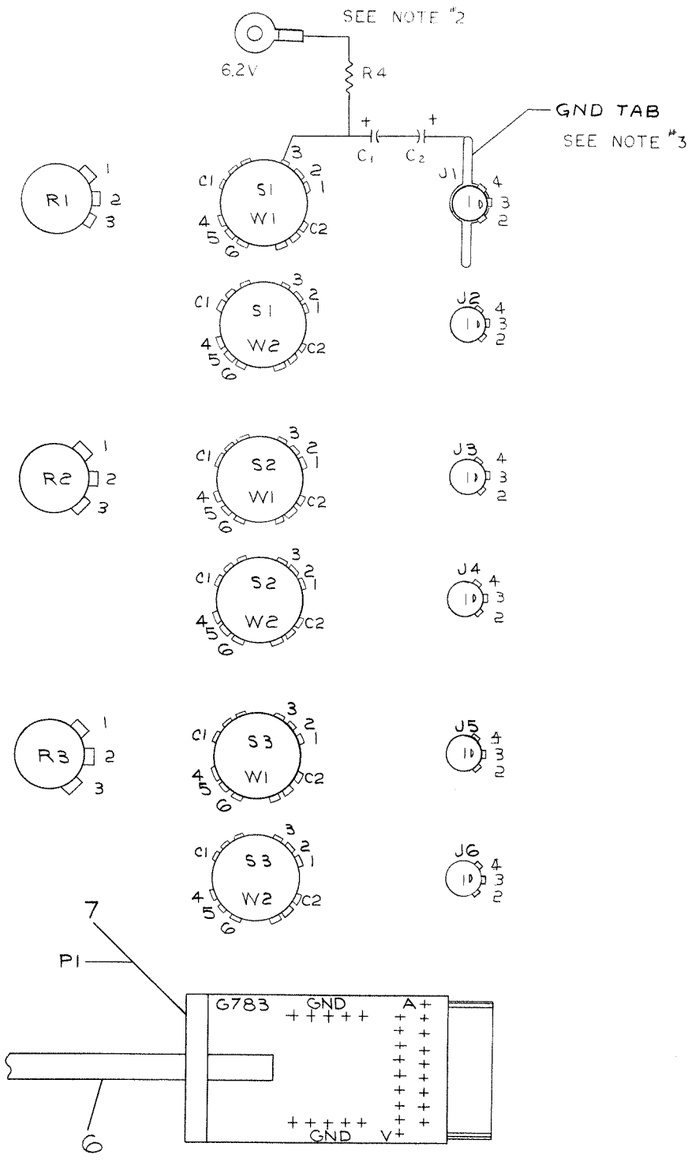

WIRING DIAGRAM
VIEW FROM REAR OF PANEL

WIRE TABLE

ITEM NO	DESCRIPTION AWG	COLOR	CONNECTIONS FROM	TO	REMARKS	SIGNAL
6	22	BLK	P1-A1	S1-W1(C1)	RED SHIELD	-CLK1
		RED	P1-B1	S1-W1(C2)	PAIR#1	+CLK1
		DRAIN	P1-GND	S1-W1(6)		SYS GND
		BLK	P1-C1	S1-W2(1)	GRN SHIELD	+6.2V
		WHT	P1-D1	S1-W2(2)	PAIR#2	-6.2V
		DRAIN	P1-GND	GND TAB		SYS GND
		BLK	P1-E1	S2-W1(C1)	BLU SHIELD	-CLK2
		GRN	P1-H1	S2-W1(C2)	PAIR#3	+CLK2
		DRAIN	P1-GND	S2-W1(6)		SYS GND
		BLK	P1-J1	S3-W1(C1)	BLU SHIELD	-CLK3
		BLU	P1-K1	S3-W1(C2)	PAIR#4	+CLK3
		DRAIN	P1-GND	S3-W1(6)		SYS GND
		BLK	P1-L1	R1-2	BLU SHIELD	VCLK1
		YEL	P1-M1	R2-2	PAIR#5	VCLK2
		DRAIN	P1-GND	GND TAB		SYS GND
		BLK	P1-N1	R3-2	BLU SHIELD	VCLK3
		BRN	P1-P1	GND TAB	PAIR#6	SYS GND
6		DRAIN	P1-GND	GND TAB		SYS GND
8		BLK	S1-W1(1)	S1-W1(5)		-CLK1
			S1-W1(5)	J1-2		-CLK1
			J1-2	J1-4		-CLK1
			J1-4	J2-2		-CLK1
			S2-W1(1)	S2-W1(5)		-CLK2
			S2-W1(5)	J3-2		-CLK2
			J3-2	J3-4		-CLK2
			J3-4	J4-2		-CLK2
			S3-W1(1)	S3-W1(5)		-CLK3
			S3-W1(5)	J5-2		-CLK3
			J5-2	J5-4		-CLK3
			J5-4	J6-2		-CLK3
			S1-W2(1)	S1-W2(5)		+6.2V
			S1-W2(5)	S2-W2(1)		+6.2V
			S2-W2(1)	S2-W2(5)		+6.2V
			S2-W2(5)	S3-W2(1)		+6.2V
			S3-W2(1)	S3-W2(5)		+6.2V
			S1-W2(C1)	R1-1		+6.2V
			S1-W2(C2)	R1-3		VCLK1
			S3-W2(C1)	R3-1		+6.2V
8		BLK	S3-W2(C2)	R3-3		VCLK3
9		RED	S1-W1(2)	S1-W1(4)		+CLK1
			S1-W1(2)	J1-3		+CLK1
			J1-3	J2-3		+CLK1
			R4-C1+	S1-W1(3)	NOTE 2	
			S1-W1(3)	S2-W1(3)		
9		RED	S2-W1(3)	S3-W1(3)		
10		BRN	S1-W1(6)	J1-1		CLK1 HQ GND
			J1-1	J2-1		CLK1 HQ GND
			S2-W1(6)	J3-1		CLK2 HQ GND
			J3-1	J4-1		CLK2 HQ GND
			S3-W1(6)	J5-1		CLK3 HQ GND
			J5-1	J6-1		CLK3 HQ GND
			S1-W2(3)	S1-W2(6)		SYS GND
			S1-W2(6)	S2-W2(3)		
			S2-W2(3)	S2-W2(6)		
			S2-W2(6)	S3-W2(3)		
			S3-W2(3)	S3-W2(6)		
10		BRN	S3-W2(6)	GND TAB		SYS GND
11		WHT	S1-W2(2)	S2-W2(2)		-6.2V
11		WHT	S2-W2(2)	S3-W2(2)		-6.2V
12		GRN	S2-W1(2)	S2-W1(4)		+CLK2
12		GRN	S2-W1(2)	J3-3		+CLK2
12		GRN	J3-3	J4-3		+CLK2
13		BLU	S3-W1(2)	S3-W1(4)		+CLK3
13		BLU	S3-W1(2)	J5-3		+CLK3
13		BLU	J5-3	J6-3		+CLK3
19		YEL	R2-1	S2-W2(C1)		+6.2V
19	22	YEL	R2-3	S2-W2(C2)		VCLK2

NOTES:

1. C1 IS WIPER CONTACT FOR SWITCH POSITIONS 1,2,3.
   C2 IS WIPER CONTACT FOR SWITCH POSITIONS 4,5,6.
2. 26" LONG RED WIRE FROM POWER SWITCH TO R4 SHOULD BE TIE-WRAPPED TO BELDEN CABLE (ITEM #6) WITH SMALL TIE WRAPS (ITEM #28) AND SHOULD BE CONNECTED TO POWER SWITCH AS SHOWN IN DETAIL "A".
3. 65 INCHES LONG 18 AWG. WHT. FROM GND. TAP SHOULD BE CONNECTED TO PIN 12 OF P7 ON 724 POWER SUPPLY. TERMINATE WIRE WITH AMP PIN # 1209378-01.

WIRE TABLE

ITEM NO	DESCRIPTION AWG	COLOR	CONNECTIONS FROM	TO	REMARKS	SIGNAL
20	22	WHT	S3-W2(2)	S3-W2(4)		-6.2V
20	22	WHT	S3-W2(4)	S2-W2(4)		-6.2V
20	22	WHT	S2-W2(4)	S1-W2(4)		-6.2V
30			C2+	GND TAP		GND
30			C1-	C2-		

REVISIONS

REV.	CHANGE NO.	CHK.

FIRST USED ON OPTION/MODEL

DO NOT SCALE DRAWING
UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINAL SURFACE QUALITY
REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL

FINISH

DRN.	J. Ferguson	DATE 7-25-69
CHK'D	A. Russ	DATE 8-5-69
ENG.	L. Hale	DATE 8/11/69
PROJ. ENG.	L. Hale	DATE 8/11/69
PROD.	A Dcale	DATE 8/18/69

NEXT HIGHER ASSY

SCALE NONE

SHEET 2 OF 2

QTY.	DESCRIPTION	PART NO.	ITEM NO.
	PARTS LIST		

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
KW12 CLOCK
CONTROL PANEL

SIZE	CODE	NUMBER	REV.
D	AD	7006335-0-0	E

DIST.

DEC FORM NO. DRD 100

SIZE D CODE AD NUMBER 7006335-0-0 REV E

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY FRANK E. SOUSA	CHECKED K. RUSS	SECTION
DATE 7/15/69	DATE 7/16/69	1
ENG L. Gale	PROD W Call	ISSUED SECT.
DATE 8/11/69	DATE 8/18/69	1

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	QUANTITY / VARIATION
1	D-IA-7407414-0-0	PANEL	1
2	B-MD-7406901-0-0	CABLE BRKT	1
3	B-MD-7407540-0-0	SWITCH ROTARY	3
4	1203562	JAX #13-B 3 COND SWITCH CRAFT	6
5	1309402-07	POT 5K 2W 20% A & B	3
6	9107582	CABLE #8778 BELDEN	8FT.
7	G783	CONN, CABLE G783	1
8	9107350-00	WIRE #22 AWG BLK STRD TEF INS	A/R
9	9107350-22	WIRE #22 AWG RED STRD TEF INS	A/R
10	9107350-11	WIRE #22 AWG BRN STRD TEF INS	A/R
11	9107350-99	WIRE #22 AWG WHT STRD TEF INS	A/R
12	9107350-55	WIRE #22 AWG GRN STRD TEF INS	A/R
13	9107350-66	WIRE #22 AWG BLU STRD TEF INS	A/R
14	9007032	TIE WRAP #SST-2-B PANDUIT	2
15	1209244	KNOB BUCKEYE SS-125L-2	6
16	1209430	PHONE PLUG #90 SWITCHCRAFT	6
17	1202790	CABLE CLAMP	1
18	9006741	EYELET A94 STIMPSON	2
19	9107350-44	WIRE #22 AWG YEL STRD TEF INS	A/R
20	9007612	SOLDER LUG	1
21	9008979	WASHER INT TOOTH 3/8	1
22	9107252	TUBING SHRINKABLE 3/8 DIA. WHT	A/R

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV	ECO NO.
(KW12) CLOCK CONTROL PNL	D-AD-7006335-0-0	A	PL	7006335-0-0	E	EM12-00050

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY FRANK E. SOUSA	CHECKED K. RUSS	SECTION
DATE 7-15-69	DATE 7-16-69	1
ENG L. GALE	PROD D. CALL	ISSUED SECT.
DATE 8-11-69	DATE 8-18-69	1

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	QUANTITY / VARIATION
23	9007929	CONN, SOLDERLESS #50321 ARKLESS	1
24	9107256-10	#22 TUBING, CLR	A/R
25	9107256-06	#22 TUBING, BLU	A/R
26	9107256-01	#22 TUBING, BRN	A/R
27	9107256-02	#22 TUBING, RED	A/R
28	90007031	TIE WRAP PANDUIT #SST-1B	8
29	1300365	RESISTOR 1K, ¼W, 5%	1
30	1002627	CAPACITOR 2.2 MFD 20V 10%	2
31	9107360-99	WIRE #18 AWG WHT.	65"
32	1209378-01	PIN #606204 AMP	1
33	9107714-01	TUBING, POLYOLEFIN HEAT SHRINK - BLK	A/R
34	9107278-11	TUBING, #18 AWG TEFLON WIRE - NATURAL	A/R

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO.
(KW12) CLOCK CONTROL PNL	D-AD-7006335-0-0	A	PL	7006335-0-0	E	

SHEET 2 OF 2

DIST. G

DEC FORM NO.
DRA 110

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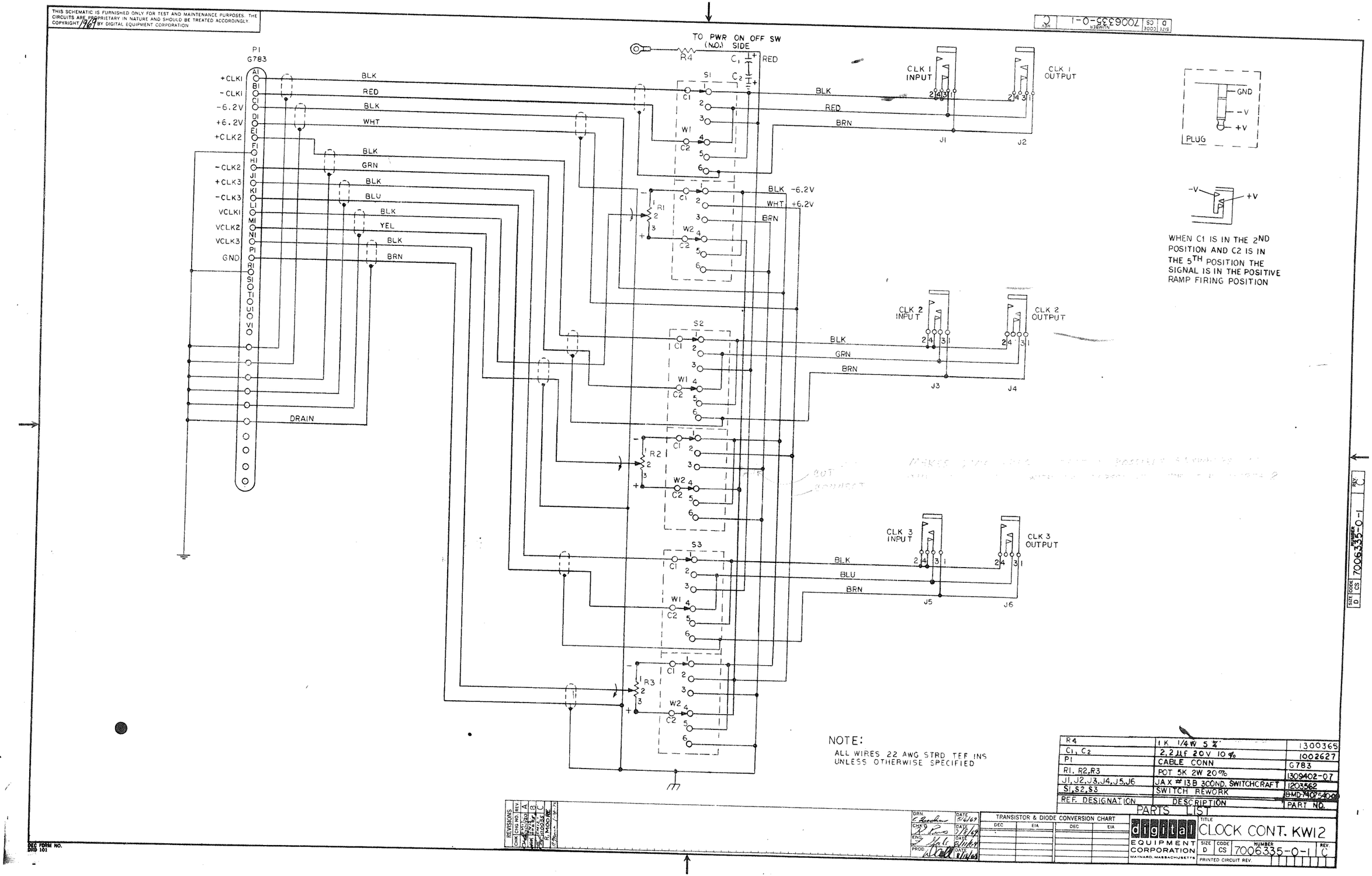

NOTE:
ALL WIRES 22 AWG STRD TEF INS UNLESS OTHERWISE SPECIFIED

REF. DESIGNATION	DESCRIPTION	PART NO.
R4	1K 1/4W 5%	1300365
C1, C2	2.2 μf 20V 10%	1002627
P1	CABLE CONN	G783
R1, R2, R3	POT 5K 2W 20%	1309402-07
J1, J2, J3, J4, J5, J6	JAX # 13B 3COND. SWITCHCRAFT	1203562
S1, S2, S3	SWITCH REWORK	BMD-7407-4000

PARTS LIST

REVISIONS			
CHG NO.	REV.		
2	A		
3	B		
4	C		

DRN.		DATE 12/6/67
CHK'D		DATE 1/16/68
ENG.		DATE 2/14/68
PROD		DATE 11/14/68

TRANSISTOR & DIODE CONVERSION CHART

DEC	EIA	DEC	EIA

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: CLOCK CONT. KW12

SIZE D | CODE CS | NUMBER 7006335-0-1 | REV. C

PRINTED CIRCUIT REV.

DEC FORM NO. DRB 101

SIZE D | CODE CS | NUMBER 7006335-0-1 | REV C

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DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

ENGINEERING SPECIFICATION

DATE 8-26-69

TITLE KW-12 Real Time Clock

REVISIONS

REV	DESCRIPTION	CHG NO	ORIG	DATE	APPD BY	DATE
A	ECO CHANGE	EM12-00055	R. MOORE	12/71	R Moore	1-24-72

Scope: The following information details the function and operation of the KW-12 - Real Time Clock Option for the PDP-12.

ENG	APPD	SIZE	CODE	NUMBER	REV
S. Teicher	L. Gale	A	SP	KW12-0-1	A

DEC FORM NO. DRA 107

ENGINEERING SPECIFICATION digital CONTINUATION SHEET

TITLE KW-12 Real Time Clock

Functional Description

The KW-12 is a PDP-12 Option that may be used to measure intervals or count events with a great deal of flexibility. In addition, to a 12-bit counter the KW-12 has a crystal controlled programmable time base and three external input channels.

Logically the KW-12 contains the following sections.

a.) Clock Control Register

The Clock Control Register is set by an IOT instruction and controls the rate of the time base and the mode of counting.

b.) Clock Enable Register

The clock enable register is set by an IOT instruction and selectively enables each of the three input channels and the clock interrupt line. A special function of the Clock Enable Register is to permit presetting of the Clock Counter.

c.) Clock Buffer Preset Register

The Clock Buffer Preset Register stores data being transferred from the A/C to the Clock Counter or from the Clock Counter to the A/C.

d.) Clock Counter

The Clock Counter is a 12-bit Binary Counter with an over-flow indicator. The contents of the Clock Counter may be transferred to the Buffer Preset Register or the Clock Counter may be preset by the Buffer Preset Register.

e.) Programmable Time Base

The Programmable Time Base provides pulses to the Clock Counter according to the rate set in the Clock Counter Register.

	SIZE	CODE	NUMBER	REV
	A	SP	KW12 - 0 - 1	A

DEC FORM NO DRA 108

f.) External Input Channels

Three External Input Channels are provided to record external events. Each channel contains an adjustable threshold Schmitt Trigger and gating set by the Clock Enable Register. All three channels may actuate the Clock Interrupt or cause the contents of the Clock Counter to be transferred to the Clock Buffer Preset Register. In addition, channel 1 and 3 have special capabilities as noted below:

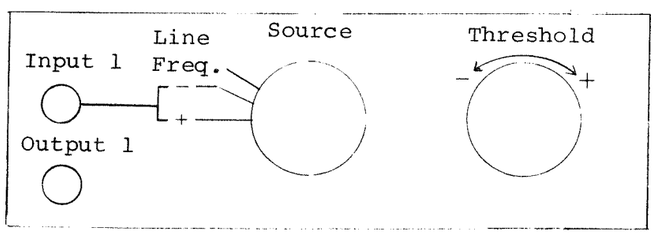
1) Channel 1

An event at channel 1 may be used as an input to the Clock Counter.

2) Channel 3

An event at channel 3 may be used to reset the Clock Counter.

Nominal Input Voltage Range	± 5 Volts
Input Type	differential
Input Resistance	10,000 ohms
Input Threshold	variable between -5 and +5
Slope	Selector switch or 60 Hz line frequency
Minimum duration input pulse	2 μsec
Maximum Permissible Input Voltage	± 50 volts



Typical Channel

Clock Control Panel

Location - behind door on left side of the front of the PDP-12.

Input Jack Type - 3 conductor phone plug

Output

This receptacle permits the input signal to be connected to another external device or to the analog input jacks of the A-D Converter.

Operation

The KW-12 is connected to the PDP-12 as a standard I/O device with device select code 13. Each data transfer from or to the clock requires 4.25 usec. All instructions for the KW-12 have the following form:

Mnemonic* $(613X)_8$ where X is $(1\text{-}7)_8$ the instructions are as follows:

	Octal Code	
CLSK	6131	Skip on Clock Interrupt Interrupt Conditions a) Enable Event 1 Interrupt (1) and Event 1 (1) b) Enable Event 2 Interrupt (1) and Event 2 (1) c) Enable Event 3 Interrupt (1) and Event 3 (1) d) Enable Overflow Interrupt (1) and Overflow (1)
CLLR	6132	C(AC) → C (Clock Control Register) The AC is unchanged

*Mnemonic defined in DIAL PMode only. In LMode user must define symbol himself.

Clock Control Register

Count Rate Reg.			Mode Reg.			Not Used		Not Used		Not Used	
00	01	02	03	04	05	06	07	08	09	10	11
C0	C1	C2	M0	M1	M2						
								Sim. Ch. 1 Event		Sim. Ch. 2 Event	Sim. Ch. 3 Event

Count C0	Rate C1	Reg. C2	Counting Rate
0	0	0	Stop Counter
0	0	1	400 KHZ
0	1	0	100 KHZ
0	1	1	10 KHZ
1	0	0	1 KHZ
1	1	0	Rate of input Channel 1
1	1	1	Stop Counter (Providing Channel 1 enabled - otherwise rate = 0)

Mode M0	Control M1	Reg. M2	
0	0	0	Counter runs as selected rate and overflows every 4096 counts. Overflow remains set until cleared with 6135 instructions.
0	0	1	*Counter runs at selected rate. Overflow causes C (Buffer Preset Reg.) to be transferred to the Clock Counter which continues to run. Overflow remains set until cleared with 6135 instructions.

*Whenever mode control register M2 goes from 0 to 1 the Clock Counter is cleared.

Mode	Control	Reg.	
0	1	0	Counter runs at selected rate. When the following occurs, the Clock Counter is transferred to the Buffer Preset Register and the Counter continues. Enable Event X (1) and Event X (1) X= 1,2,3
0	1	1	Counter runs at selected rate. When the following occurs C (Clock Counter) is transferred to the Buffer Preset Register and the Clock Counter continues to run either from the present count or zero as shown. Enable Event X (1) and Event X (1) X= 1,2 Clock Counter continues from present count. Enable Event 3 (1) and Event 3 (1) also causes the Clock Control Counter to be cleared

100)
101)
110) When M0 is a (1) the occurrence of overflow is used to trigger the A/D Converter if A-D Control also has FAST-SAMPLE flip-flop set. The remaining two mode control bits are decoded exactly as above. *
111)

CLAB 6133 C (AC) ⟶ C (Buffer Preset Register) The AC is unchanged

CLEN 6134 C (AC) ⟶ C (Clock Enable Register)

Enable Register Bit

00 - 03 Not used
04 C (Buffer Preset Register) ⟶ (ORed) C (Clock Counter)

*This bars A-D conversion starts by the SAM instruction. A--D conversion starts with Clock Overflow only; loaded into AC by SAM instruction only.

04 cont'd.		If mode control register M2 (1).
05		Enable Interrupt when Overflow (1)
06		Enable Interrupt on Event (1)
07		Enable Input Channel (1)
08		Enable Interrupt on Event 2 (1)
09		Enable Input Channel 2
10		Enable Interrupt on Event 3 (1)
11		Enable Input Channel 3
CLSA	6135	Clock status is inclusive ORed into the AC. The clock status bits are then cleared.

AC Bit

00	Overflow (1)
01 - 05	Not used
06	Event 1 (1)
07	Pre-Event (1)
08	Event 2 (1)
09	Pre-Event 2 (1)
10	Event 3 (1)
11	Pre-Event 3 (1)

If both Event X (1) and Pre-Event X (1) then 2 or more events have occurred on Channel X since the previous 6135 instruction.

~~*Overflow flip-flop should be cleared with the 6135 IOT prior to use his instruction.~~

CLBA	6136	C (Buffer Preset Register) → C (AC)
CLCA	6137	C (Clock Counter) → C (Buffer Preset Register) → C (AC)

The following PDP-12 Drawings apply to the KW-12:

A-ML-PDP-12-0	PDP12 System
K-WL-EM12-0-3	Wire List
D-MU-EM12-0-1	Module Utilization Mem
D-MU-EM12-0-2	Module Utilization Mem
D-BS-KW12-0-CLC	CLC Clock IO Control
D-BS-KW12-0-CLEA	CLEA Input Channel 1
D-BS-KW12-0-CLEB	CLEB Input Channel 2
D-BS-KW12-0-CLEC	CLEC Input Channel 3
D-BS-KW12-0-CLIO	CLIO Clock to Input
D-BS-KW12-0-CLKA	CLKA Clock & Buffer 00-05
D-BS-KW12-0-CLKB	CLKB Clock & Buffer 06-11
D-BS-KW12-0-CLR	CLR Clock Rate
D-BS-KW12-0-CLTB	CLTB Clock Time Base
A-PL-EM12-0-1	Module Utilization MEM PL
A-PL-EM12-0-2	Module Utilization Mem PL
A-AD-7006335-0-0	Clock Control Panel Assembly
A-PL-7006335-0-0	Clock Control Panel Assembly (Parts List)
D-CS-70006335-0-1	Clock Control Circuit Schematic
A-PL-EM12-0-1	Module Utilization
A-PL-EM12-0-2	Module Utilization

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MASTER DRAWING LIST

DWG. NO.	REV. LET.	NO. OF SHEETS	TITLE
A-SP-TC12-F-1		3	ENGINEERING SPECS.
D-FD-TC12-F-2			TIMING DIAGRAM
A-SP-TC12-F-3		2	ACCEPTANCE & CHECKOUT PROCEDURE
D-BS-TC12-F-LTP8	D	1	LTP8 TAPE CONTROL
K-WL-EM12-0-3	REF		WIRE LIST
D-MU-EM-0-1	REF		MODULE UTILIZATION MEM
D-MU-EM-0-2	REF		MODULE UTILIZATION MEM
A-PL-EM12-0-1	REF		MODULE UTILIZATION MEM PL
A-PL-EM12-0-2	REF		MODULE UTILIZATION MEM PL

REVISIONS			
REV.	DATE	CHG. NO.	APP'D.
A	3/69	EM12-01	L.G.
B	6/69	EM12-04	L.G.
C	8/69	EM12-10	L.G.
D	2/70	EM12-32	L.G.
E	4/70	EM12-36	L.G.

DRN. J. APREA	DATE 3/10/69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. D. Hutchins	DATE 3/10/69	
ENG. L. Gale	DATE 3/10/69	
PROJ. ENG. L. Gale	DATE 3/10/69	
PROD. A. Mark	DATE 3/10/69	
FIRST USED ON PDP-12		TITLE 8 TAPE CONTROL
SCALE		SIZE A · CODE ML · NUMBER TC12-F · REV. E
SHEET OF		DIST.

DEC FORM NO. DRA 103

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LTP8 W1(1)H — LE
LTP8 W2(1)H — M2
M112 A33 → N2

+3V A33U1 H
+3V A33V1 H
−LWN WINDOW DATA IN L
LTP8 CLOSE 8 WIND L
LTT TP3 H

LTP8 W9 M21G C33 (C1, B1, A1, F1, D1)
LTP8 W8 M21G C33 (E2, D2, J2, H2, F2)
LTP8 W7 M21G C33 (J1, H1, M1, L1, K1)
LTP8 W6 M21G C33 (M2, L2, K2, P2, N2)
LTP8 W5 M21G C33 (P1, N1, U1, S1, R1)
LTP8 W4 M21G C33 (T2, S2, V1, V2, U2)
LTP8 W3 M21G C32 (C1, B1, A1, F1, D1)
LTP8 W2 M21G C32 (P1, N1, K2, U1, S1, R1)
LTP8 W1 M21G C32 (J1, H1, M1, L1, K1)

LTP8 SET 8 TAPE L
LIP TAPE PRESET H
+3V A33V1 H
LTP8 TAPE M21G C32 (N2, P2, M2, L2, R2, K2)

LTP8 TAPE SEL H — E1
LTP8 W1(1)H — F1
M115 C29 → J1 → LTP8 BM L

LTP8 W9(Ø)H — F1
LTP8 W8(1)H — H1
LTP8 W7(1)H — J1
LTP8 W6(Ø)H — K1
LTP8 W5(1)H — K2
LTP8 W9(Ø)H — L2
LTP8 W3(1)H — M2
LTP8 W2(Ø)H — N2
M119 A31 → P2 → M2
M111 A35 → N2

LTT CLOSE WINDOW L — D1
LIP TAPE PRESET L — D2
PA M304 C19 → F1 → LTP8 CLOSE 8 WIND H
H1 → LTP8 CLOSE 8 WIND L
B1 → +5V

LTMR IOT 6152 H — N2
PRE AC Ø9(1)H — P2
+3V C22U1 H — R2
M115 C29 → S2 → LTP8 SET 8 MTN L

LTMR IOT 6152 H — D2
PRF AC 1Ø(1)H — E2
+3V C22U1 H — F2
M115 C29 → H2 → LTP8 SET 8 TAPE L

+3V A33V1 H
LTP8 BM L — E2
LTT TP9 H — D2
LTP8 BLOCK M21G C32 (A1, J2, H2, F2)
PRF AC11(1) L — T2
LTP8 WRITE M21G C32 (K2, V1, S2, V2, U2)
M112 C24 → V1
M111 D21 → N2 → LTP 8 WRITE SEL H
LTM CLEAR TAPE WORD L
LTP8 SET 8 TAPE L
LTP 8 CLOSE 8 WIND L

K2 → M111 C21 → L2 → LTP8 TAPE WORD H

LTS TTS9(1)H — K1
LTP8 WRITE(Ø)H — L1
M115 C29 → N1 → LTP8 EN RWB L

LTS LC ØØ(Ø)H — T2
LTS LC Ø1(1)H — U2
M115 C29 → V1 → LTP8 TAPE WORD L
LTP8 BM L — R1
M113 D29 → S1 → P1

L2
LTT TP9 H — M2
M113 D29 → N2 → LTP8 LD TAC L

M112 C24 → V1
LTP8 TAPE (1) L — U1
M111 C21 → P2 → R2 → LTP8 TAPE SEL H

IOT 6152	
AC BIT	FUNCTIONS
AC 9(1)	CLEAR BLOCK
AC 5(1)	SET BACKWARD
AC 6(1)	SELECT UNIT 1
AC 7(1)	SET FORWARD
AC 9(1)	SET 8 MOTION & FORWARD IF MOTION = Ø
AC 1Ø(1)	SEL 8 TAPE AND AC 11 → WRITE

SKL 14 = SKIP ON 8 BLOCK
SKL 17 = SKIP ON 8 WORD
TAPE PRESET = Ø → WRITE
Ø → MOTION
DESELECT 8 TAPE

REVISIONS				
CHK	CHANGE NO.	REV.		
	EM12-00001	A	L. GALE	4/24/69
	EM12-00004	B	L. GALE	8-18-69
	EM12-00010	C	DWG. # WAS TC128-0-LTP8	
	EM12-000032	D	GALE	3/4/70

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINAL SURFACE QUALITY / REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL
FINISH

DRN. — DATE 1-29-69
CHKD. — DATE 2/1/69
ENG. — DATE 2-1-69
PROJ. ENG. — DATE 2-1-69
PROD. — DATE 2/25/69
FIRST USED ON TC12-F
SCALE
SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE
LTP8
8 TAPE CONTROL

SIZE D | CODE 85 | NUMBER TC12-F-LTP8 | REV. D
DIST.

DEC FORM NO. DRD 102A

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MASTER DRAWING LIST

DWG. NO.	REV. LET.	NO. OF SHEETS	TITLE
A-ML-PDP12-0		1	PDP12 SYSTEM
K-WL-EM12-0-3	REF		WIRE LIST
D-MU-EM12-0-1	REF		MODULE UTILIZATION MEM
D-MU-EM12-0-2	REF		MODULE UTILIZATION MEM
D-BS-AD12-0-YAD	D	1	A-D CONVERTER
D-BS-AD12-0-YADA	A	1	YADA CHAN 10-17
D-BS-AD12-0-YADB	A	1	YADB CHAN 20-37
D-BS-AD12-0-YADC	E	1	YADC A-D CONTROL
A-PL-EM12-0-1	REF		MODULE UTILIZATION MEM PL
A-PL-EM12-0-2	REF		MODULE UTILIZATION MEM PL
A-SP-AD12-0-1	E	8	PDP-12 ANALOG TO DIGITAL CONVERTER

REVISIONS			
REV.	DATE	CHG. NO.	APP'D.
A	3/69	EM12-01	L.G.
B	4/69	EM12-02	L.G.
C	7/69	EM12-08	L.G.
D	8/69	EM12-09	L.G.
E	1/70	12-55	L.G.
F	4/70	12-68	L.G.
H	6/70	12-76	L.G.
J	10/70	EM12-41	L.G.
K	11/70	EP12-30	L.G.
L	0671	00001	R.S.
M	10/71	EM12-53	RM

DRN. J. APREA	DATE 3/2/69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. R. HUTANK	DATE 3/7/69	
ENG. L. Gallo	DATE 3/10/69	TITLE ANALOG TO DIGITAL CONVERTER
PROJ. ENG. L. Gallo	DATE 3/10/69	
PROD. W. Hall	DATE 3/10/69	
FIRST USED ON PDP-12		SIZE A / CODE ML / NUMBER AD12-0 / REV M
SCALE		
SHEET 1 OF 1		DIST.

DEC FORM NO. DRA 103

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G783
F33

YAD ANALOG CHAN 7 — CW — E1 — R2 — R2
YAD ANALOG CHAN 6 — CW — H1 — S1 — S1
YAD ANALOG CHAN 5 — CW — J1 — P1 — P1
YAD ANALOG CHAN 4 — CW — K1 — T2 — T2
YAD ANALOG CHAN 3 — CW — L1 — M1 — M1
YAD ANALOG CHAN 2 — CW — M1 — L2 — L2
YAD ANALOG CHAN 1 — CW — N1 — K1 — K1
YAD ANALOG CHAN Ø — CW — P1 — N2 — N2

ANALOG BUFF A215 D34

W Ø 23 E35
F2 BLK
H2 BLK
J2 BLK
K2 BLK
L2 ORG
D2 RED
S2
E2 BLU
M2 GRN
12-031852
120VAC@7-420CPS)
CLR EXT A-D START H

D1 -7V -15V
J2 H2 +7V +15V
C1
F1
R1
GRD

D2 +15V REG
E2 -15V REG
F2 HQ GRD

V2
A2 +5V
B2 -15V
C2 GRD
D2 +15V REG
E2 -15V REG
F2 HQ GND
YADC IR 11(1)H
YADC IR 1Ø(1)H
YADC IR 11(Ø)H
YADC IR 11(1)H
C1 YADC IR 1Ø(Ø)H
YADC IR Ø9(1)H
YADC IR 11(Ø)H
YADC IR 11(1)H
D1 YADC IR 1Ø(1)H
YADC IR 11(Ø)H
B1 YADC IR 11(1)H
E1 YADC IR 1Ø(Ø)H
A1 YADC IR Ø9(Ø)H
F1 YADC IR 11(Ø)H
H1 YADC NEQ ØØ L
D33 MULTIPLEX A131
U1
YAD MPX RTN H

* AD12'S PRE-WIRED TO EM12 REV.V OR HIGHER USES A9Ø5 INSTEAD OF A9Ø4.

YAD MPX MODE H
ANA. BUF A215 D34
+15V REG D2
-15V REG F2
HQ GRD F2
P2
U2
YAD MPX RTN H
V2
E34 F34
FJ2
+15V REG ED2
FL2
FF2
YADC HOLD (1) L
-15V REG EE2
FM2
HQ GRD EF2
FK2
EU2 ES2 FA2 +5V
SAMPLE & HOLD A9Ø4 EH2 FH2
EJ2
EV2
DV2
EM12 HIGHER THAN REV. U USES A405
A-D CONV AB11
C35 D35
YADC START H CH2
+15V REG DU2
-15V REG CV2
HQ GRD DN2
+5V CA2
29 CE2 YAD AD 2(1) H
28 CD2 YAD AD 3(1) H
27 CN2 YAD AD 4(1) H
26 CM2 YAD AD5(1) H
25 DL2 YAD AD6(1) H
24 DR2 YAD AD 7(1) H
23 DK2 YAD AD8(1) H
22 DP2 YAD AD9(1) H
21 DJ2 YAD AD 1Ø(1) H
20 DT2 YAD AD 11 (1) H
DM2
YAD DONE H

REVISIONS	REV.
CHK	
CHANGE NO.	00001
	A
L GALE 4/24/69	
EM12-00008	B
L GALE 5-15-69	
12-00076	C
L GALE 7-2-70	
EM12-00053	D
LINDHEIMER 10-20-71	

QTY.	DESCRIPTION	PART NO.	ITEM NO.
	PARTS LIST		

UNLESS OTHERWISE SPECIFIED
UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 | FRACTIONS ± 1/64 | ANGLES ± 0°30'
FINAL SURFACE QUALITY
REMOVE BURRS AND BREAK SHARP CORNERS
MATERIAL
FINISH

DRN. DATE 1-4-68
CHKD. DATE 2/27/68
ENG. DATE 2-28-68
PROJ. ENG. DATE 2-28-68
PROD. DATE 2/28/68
FIRST USED ON AD12
SCALE
SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE
A-D CONVERTER YAD

SIZE D | CODE 85 | NUMBER AD12-Ø-YAD | REV D
DIST.

DEC FORM NO. DRO 102A

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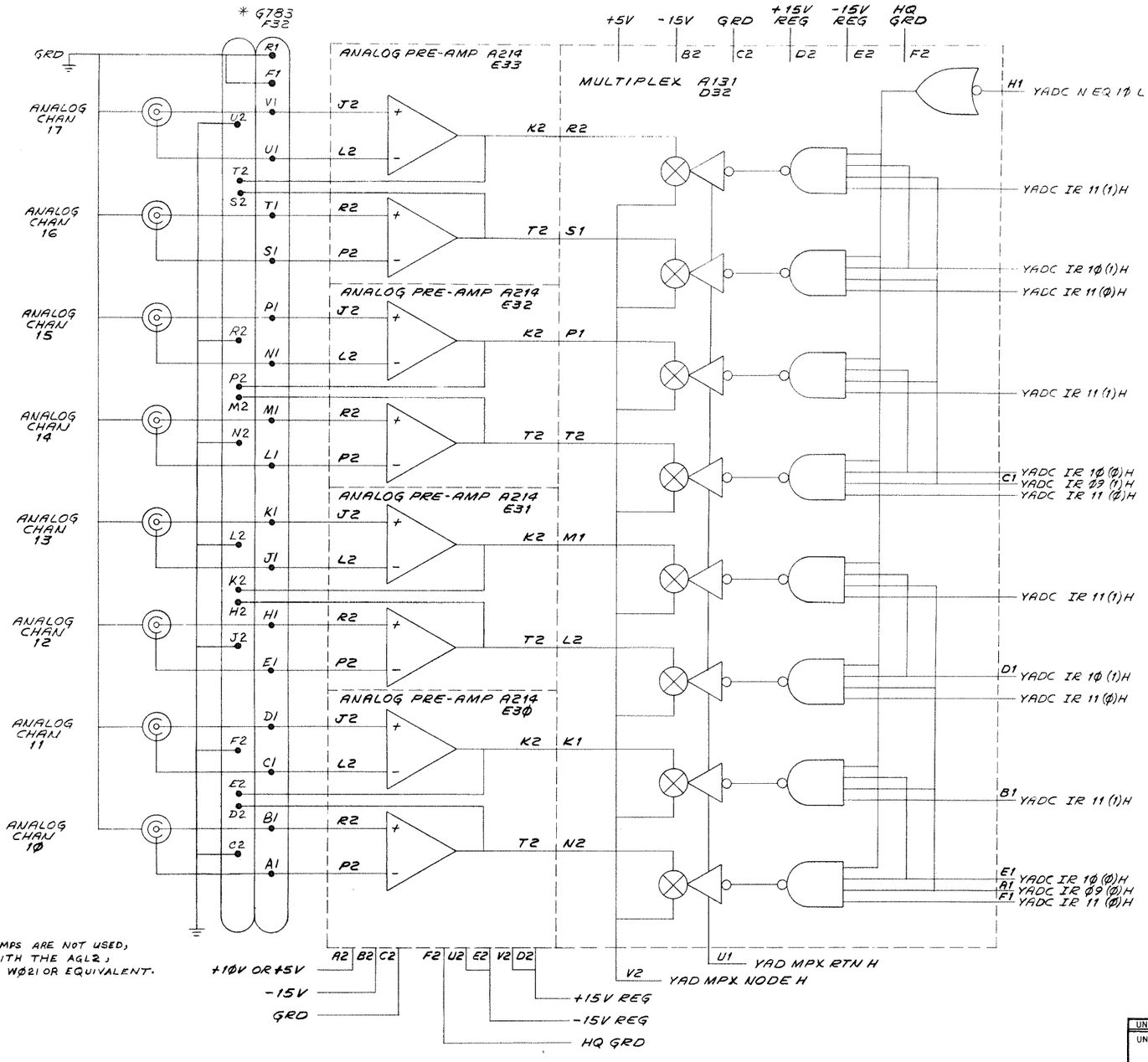

* WHEN PREAMPS ARE NOT USED, SUCH AS WITH THE AGL2, CABLE IS A WØ21 OR EQUIVALENT.

REVISIONS	CHK	CHANGE NO.	REV
		00002	A
		T QUILLIN	
		L GALE	
		6/18/69	

DEC FORM NO DRD 102A

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINAL SURFACE QUALITY
REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL

FINISH

		DATE
DRN		1-4-69
CHK'D		2/27/69
ENG.		2-28-69
PROJ. ENG.		2-28-69
PROD.		3-5-69

FIRST USED ON AD12

SCALE

SHEET / OF /

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE
YAD A
CHAN 1Ø-17

SIZE	CODE	NUMBER	REV.
D	BS	AD12-Ø-YADA	A

DIST.

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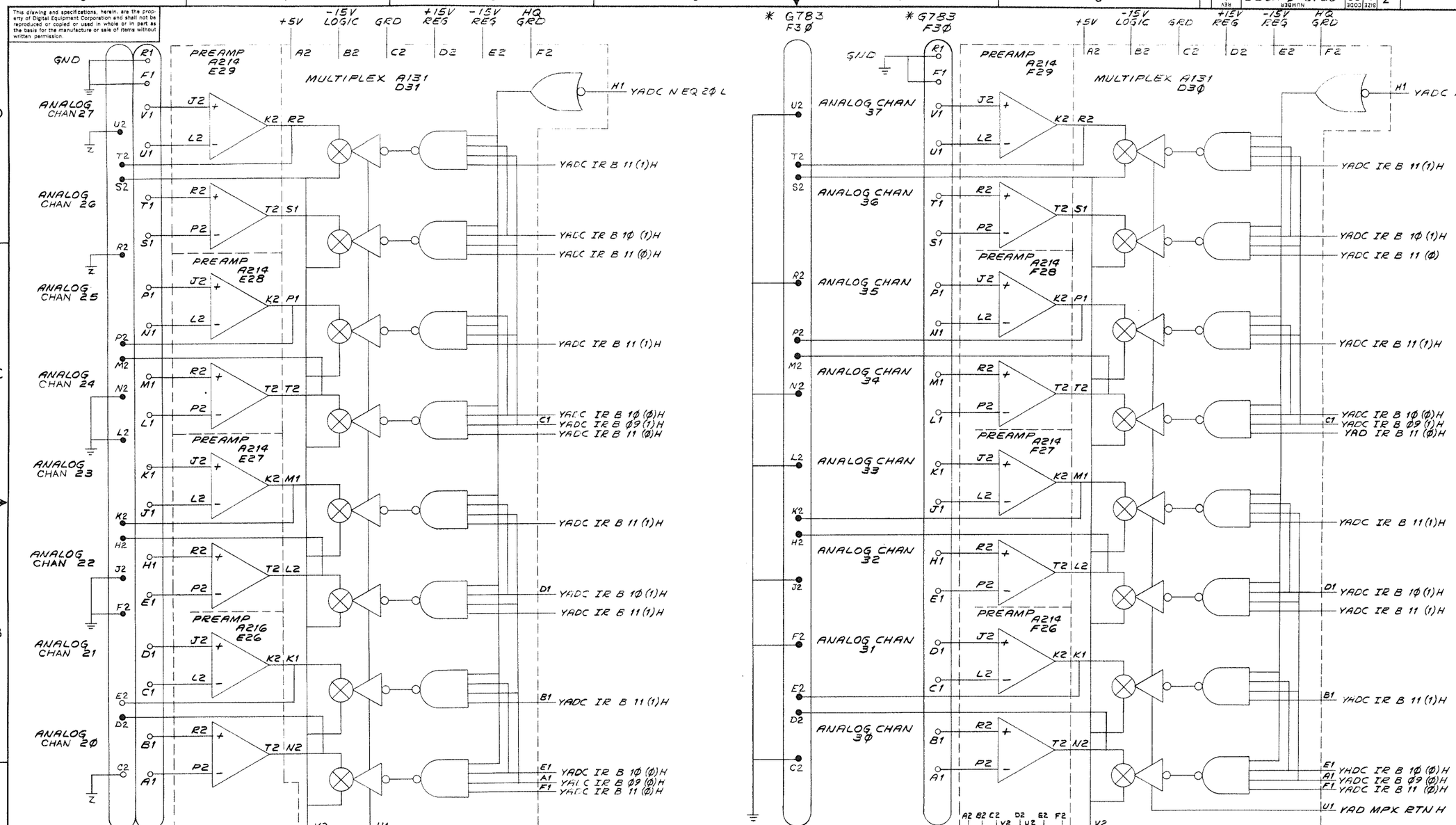

* WHEN PREAMPS ARE NOT USE — SUCH AS WITH THE AGL2 — CABLE IS A W021 OR EQUIVALENT.

REVISIONS			
REV.	CHANGE NO.	CHK	
A	00002		T QUILLIN LGALE 1 Dec 68

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINAL SURFACE QUALITY
REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL

FINISH

DRN.		DATE 1-4-68
CHK'D		DATE 2/2/69
ENG.		DATE 2/3/69
PROJ. ENG.		DATE 2/26/69
PROD.		DATE 3/4/69

FIRST USED ON 9012

SCALE

SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE

YAD B
CHAN 2Ø-37

SIZE	CODE	NUMBER	REV.
D	BS	AD12-Ø-YADB	A

DIST.

DEC FORM NO. DRD 102A

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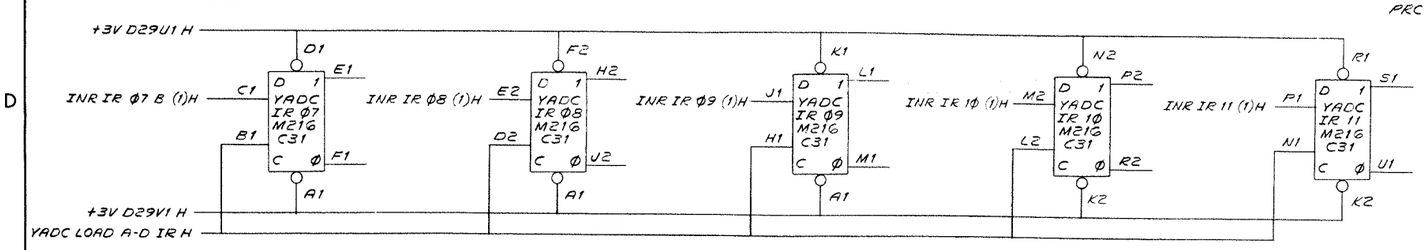
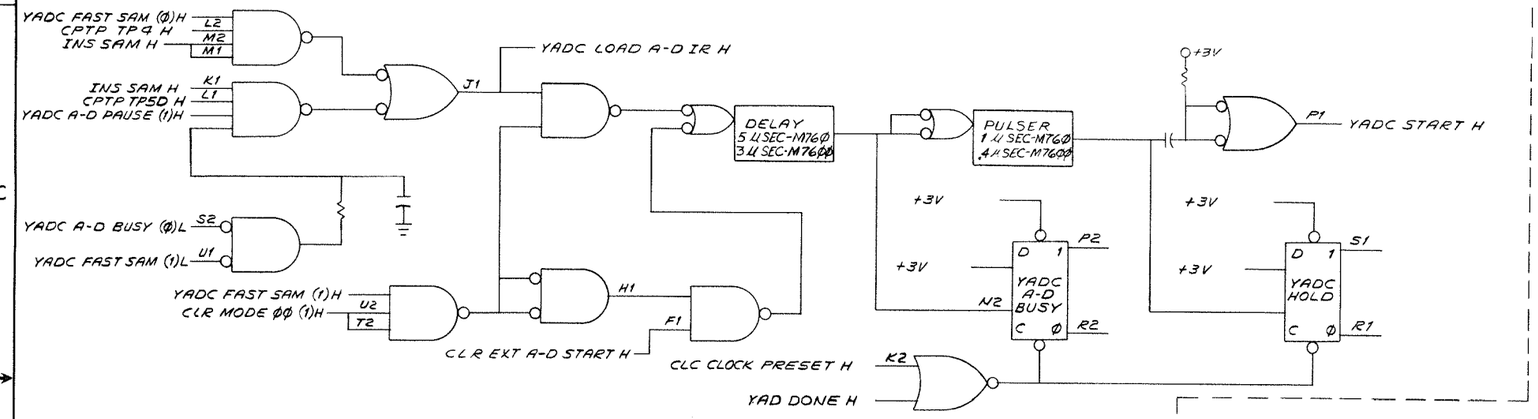
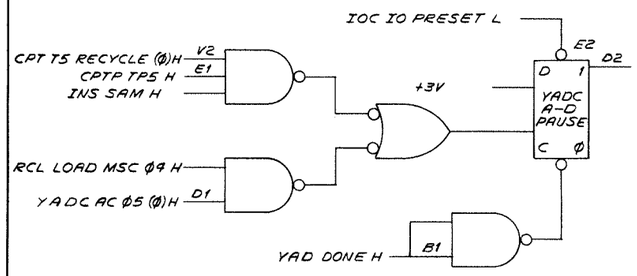
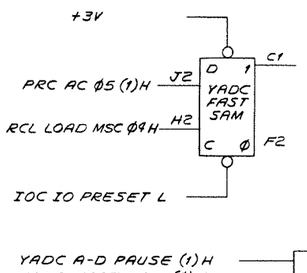
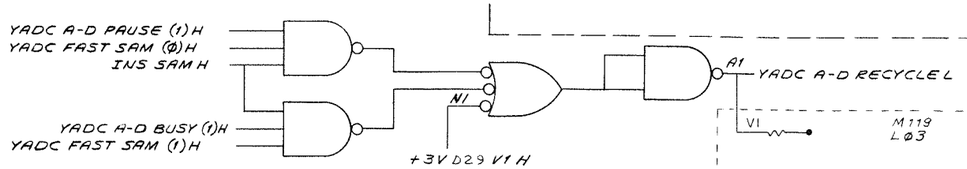




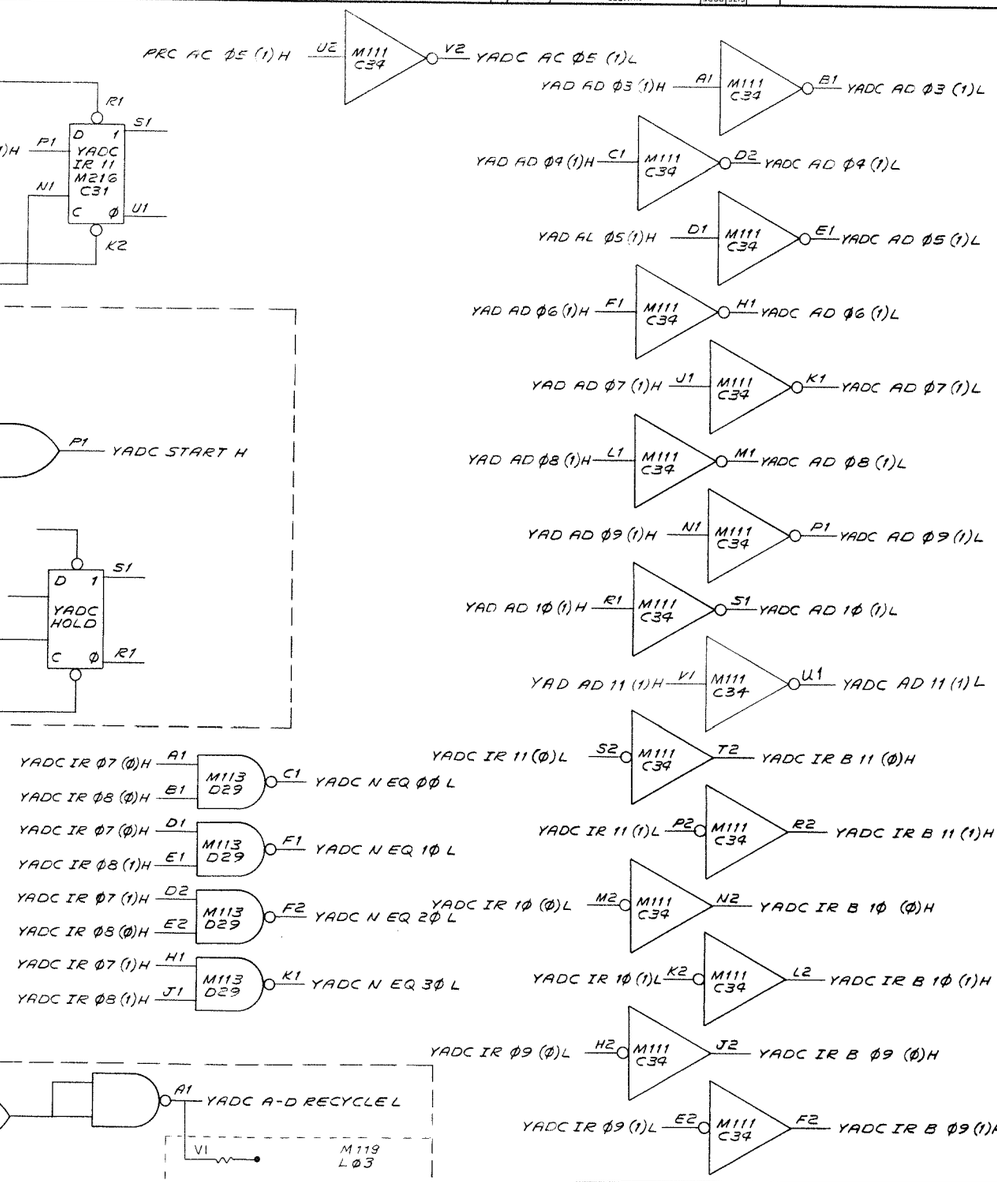




M76ØØ*
C36



* AD12'S PRE-WIRED TO EM12 REV. U OR LOWER USE M76Ø INSTEAD OF M76ØØ.



REVISIONS							
CHK	CHANGE NO.	REV.					
	00001	A	L.GALE	4/24/68			
	EM12-00009	B	L.GALE	8/26/68			
FV	EM12-00041	C	D.MACKLIN	10/30/69			
FV	EP12-00030	D	D.MACKLIN	1-7-70			
	E112-00053	E	LINDHEIMER	10-20-71			

DEC FORM NO. DRD 102A

QTY.	DESCRIPTION	PART NO.	ITEM NO.
	PARTS LIST		

UNLESS OTHERWISE SPECIFIED
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINAL SURFACE QUALITY REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL

FINISH

DRN.	Joe Ames	DATE 2-12-69
CHK'D.		DATE 2/27/69
ENG.		DATE
PROJ. ENG.		DATE
PROD.		DATE

FIRST USED ON AD12
SCALE
SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE
YADC
A-D CONTROL

SIZE	CODE	NUMBER	REV.
D	BS	AD12-Ø-YADC	E

DIST.

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DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

ENGINEERING SPECIFICATION

DATE

TITLE PDP-12 ANALOG TO DIGITAL CONVERTER

REVISIONS

REV	DESCRIPTION	CHG NO	ORIG	DATE	APPD BY	DATE
	1) AD12, AM12, AG12 Specifications 2) AD12, AM12, AG12 Parts Allocation 3) Adjustment Procedure					
A	DWG. NO. WAS A-SP-PDP12-1-6	12-00055	T.J.DUGGAN	2-3-70	T.J.Duggan	2/4/70
B		12-00068	L. GALE	4-15-70	L. Gale	4/21/70
C		12-00076	BUDIANSKY	6-4-70	D Mosely	7/2/70
D	CHANGE PER ECO	AD12-00001	SCHWEGLER	5-6-71	R Schwegler	6/28/71
E	CHANGE PER ECO	EM12 00053	LINDERHEIMER	10-18-71		

ENG	APPD	SIZE	CODE	NUMBER	REV
L. Gale 6/3/69	L. Gale 6/3/69	A	SP	AD12-0-1	E

DEC FORM NO. DRA 107

ENGINEERING SPECIFICATION

digital CONTINUATION SHEET

TITLE

1) AD12, AM12, AG12 Specifications

Analog Input

Input Voltage Range: AD-12, AG12	±1 volt
AM-12	±5 volts
Input Resistance AD-12, AG12 (normal noninverting connection):	±2% 70 k Ω, 300 pf in parallel
(inverting input connection):	35 k, 300 pf in parallel
AM-12	≥10 meg. ohms, 300 pf to selected multiplex
Common-Mode Rejection: AD12, AG12 (source IMP <250)	25 db worse case 35 db typical
AM-12	No. com. mode rej.
Common-Mode Voltage Range: AD12, AG12	±3.5 volts from system fault line ground
Input Protection: AD-12, AG12	±67 volts from fault line indefinitely 120-volts rms for 5 sec.
AM-12	± 8 volts indef.
Overvoltage Recovery Time: AD12, AG12	8 μsec
Frequency Response: AD12, AG12, AM12	0- to 30-kHz flat 60-kHz 3-db down
Parameter Pots: AD12	8 10-turn parameter potentiometers are provided. 1-½ to 2 turns at each extreme are beyond the A to D range.
Long Term Stability (1 hour)	Better than 1% for ± 30C.

Multiplexer Performance

Number and Type:	16 FET multiplex switches expandable to 32 (AM-12)

SIZE	CODE	NUMBER	REV
A	SP	AD12-0-1	E

DEC FORM NO DRA 108

1) AD12, AM12, AG12 Specifications cont'd.

A/D Performance (See Note 1)

Resolution:	10 bits ±½ LSB ± .1%/°C for Inputs to ch. 10→ 37
Conversion Rate:	50 kHz
Sample Acquisition Time:	5 μsec (±1 μsec)
Aperture Time:	200 nsec

Mechanical

Precision-stabilized power supplies, input amplifiers, sample-and-hold multiplexers and analog-to-digital converter modules are located with the memory in the PDP-12 main frame. Connection is made to the data terminal section to the left of the console.

Analog parameters may be set in by precision 10 turn potentiometers.

Analog input jacks are provided to accept standard three-contact phone plugs.

Inverting inputs must have dc resistance less than 250 Ω in all input conditions.

No temp or long term stability is implied for parameter pots.

AM12 inputs have a small current leakage, similar to a capactive charge, as the channel first becomes selected under some conditions. This leakage is less than 3 ma for a period not to exceed 1 μsec.

Note 1 - Newer AD12's use A405 sample and hold and a M7600 A-D Control Module. This newer version has a faster sample rate. See sheet 8 of this specification.

Qty.		Part #	Use in AD12	Location	Print Ref.
4		A214	8 Analog Preamplifiers	E30 to E33	AD12-Ø-YADA
2		A131	16 Multiplex FET Switches	D32, D33	AD12-Ø-YAD AD12-Ø-YADA
1		A215	Pot. Filter Cap., Zener Ref. & Bootstrap Amp.	D34	AD-12-Ø-YAD
1	*	A405	Sample and Hold	E34, F34	AD-12-Ø-YAD
1		A811	A/D Converter Mod.	C35, D35	AD-12-Ø-YAD
1	*	M7600	A/D Control Logic	C36	AD-12-Ø-YADC
1		12-3185-2	Regulated Power Supply ±15V	Lower Right of Memory Panel	UA-PDP-12-Ø-Ø
1		700-6045	Bracket		700-6045
1		700-7964	Analog Panel	To Left of PDP-12 Console	CS-700-7964 AD-700-5964
			Connects to ADC with Cable		
			Terminated in G783 con.	F33	AD-12-Ø-YAD
1		700-5963	Relay Input	Below Power Switch Panel	CS-700-5963 AD-700-5963
			Panel--8 Phone Plug Recept.		
			Cable Terminated in G783	F32	AD-12-Ø-YADA

* AD12's pre-wired to EM12 Rev U or lower use A404 and M760.

Qty.	Part #	Use in AM12	Location	Print Ref.
2	A131	16 Multiplex FET Switches	D30, D31	AD-12-Ø-YADB
		Input Connector	F30, F31	AD-12-Ø-YADB

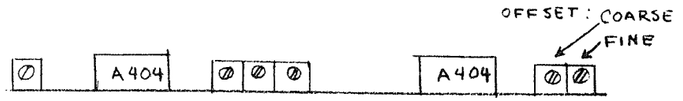
Qty.	Part #	Use in AG12	Location	Print Ref.
8	A214	Analog Preamplifiers	E26-E29	AD12-Ø-YADB
			F26-F29	
		Input, Relay Panel	F30-F31	AD-700-6046
				AD12-Ø-YADB

1) Set Ch. Ø pot about 5 turns from either end.

2) Connect pin D34N2 to D34F2.

3) Run AD TST Program with all sense switches → Ø.

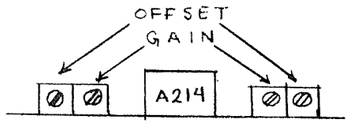
** 4) Adjust A404 Sample and Hold offset until Ch. Ø reaches the threshold point of +Ø and -Ø volts.



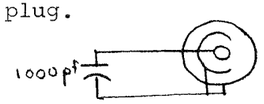
5) Remove D34N2 to D34F2 connection.

6) Turn parameter potentiometer slowly 10 turns over the full range. Assure that each count is displayed on Ch. Ø display. Repeat this test on each of the remaining parameter pots. (1-½ to 2 turns at each end of the pot do not offset the number displayed.)

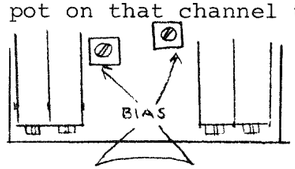
7) Insert EDC Prec. Voltage source in channel to be tested; set to Ø volts, then adjust offset pots on respective A214 to the switching point of +Ø and -Ø volts.



Note: If the boards have been tested in the module test facility, bias has been preset. If the bias has not been preset, place A214 on module extender and insert a phone plug with the following circuit in place of the EDC plug.



Adjust the bias pot on that channel to assure ±Ø volts display.



** See Sheet 8 of this specification for A405 layout.

Replace EDC and assure ±Ø volts.
Readjust offset if necessary.

8) Set EDC to +.985; adjust gain to indicate +776 readout on channel under test.

9) Increase EDC voltage to +.995; assure +777.

10) Set EDC at -.985; assure -776 reading. If necessary, slightly readjust the offset pot on the A214 in question, but insure that a reading of +Ø or -Ø (or the ±Ø threshold) is still present when EDC is set to Ø volts. See step 7.

11) Record voltage of switching indecision point for the numbers -770 to -777 and +000 to +007; assure non is less 1 mv nor greater than 3 mv.

12) Repeat steps 7 through 12 for successive analog channels.

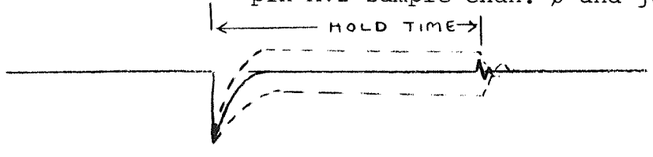
* 13) A note about the other pots on the A404: Only the offset pot should be adjusted in the normal set-up procedure of the PDP-12 analog-to-digital converter.

* Use step 13 on Sheet 8 of this specification when A405 is installed. If inadvertently other pots are adjusted, the following information may be helpful:

Pot A (marked on board) is the amplifier balance

Pot B — is gain. This adjustment is very fine; being only ±.2% misadjustment would not be disasterous.

Pot C — is pedistal, to adjust this look at pin AV2 sample chan. Ø and jump back.



Adjust this voltage to hold exactly equal to sample voltage.

Pot D — No normal machine mode facilitates readjustment.

The analog preamplifiers are designed with bias circuitry to simplify change of input characteristics from DC to AC sources for signals applied to the noninverting input. The inverting input must at all times be driven from a low DC impedance.

NEWER AD12's

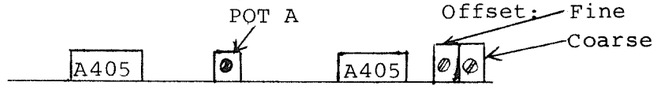
When A405 and M7600 are installed, the following performance specifications hold:

A/D Performance

Resolution:	10 bits ±½ LSB ± .1%/°C for Inputs to ch. 10→37
Conversion Rate:	69 KHz
Sample Acquisition Time:	3 usec (±1 usec)
Aperture Time:	100 nsec

Steps 4 and 13 are modified as follows:

4) Adjust A405 Sample and Hold offset until Ch. Ø reaches the threshold point of +Ø and -Ø volts.



13) A note about the other pot on the A405: Only the offset pots should be adjusted in the normal set-up procedure of the PDP-12 analog-to-digital converter.

Pot A (marked on board) is the amplifier balance

The analog preamplifiers are designed with bias circuitry to simplify change of input characteristics from DC to AC sources for signals applied to the noninverting input. The inverting input must at all times be driven from a low DC impedance.

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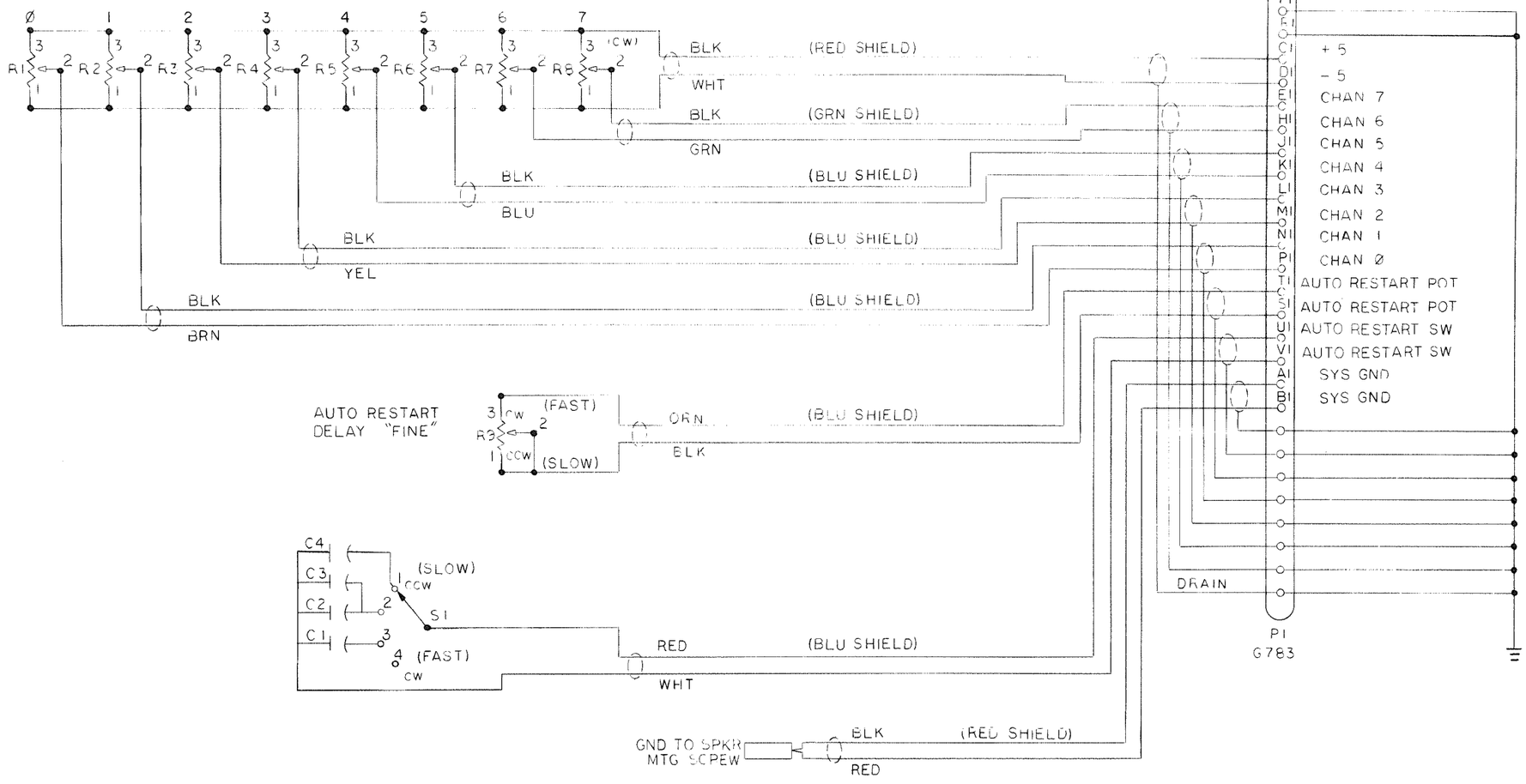
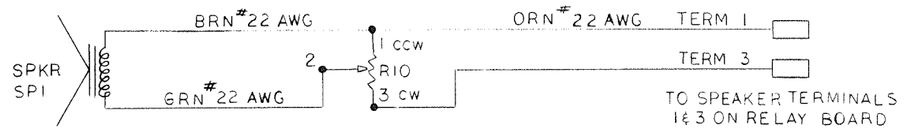
ANALOG CHANNELS Ø THRU 7





NOTE: WIRE IS BELDEN CABLE #8774 EXCEPT AS NOTED

REF DESIG	DESCRIRTION	PART NO
C4	CAPICITOR 10 MFD 20V	1004813
SP1	SPEAKER 4 BMS-45 45Ω 3W	1204880
P1	CABLE CONN	G783
C1	CAPACITOR .033 MFD 100 V	1000050
C2	CAPACITOR .15 MFD 35 V	1002180
C3	CAPACITOR .47μf 35V	1005965
S1	SWITCH PA-020 CENTRAL AB	1209304
R10	POT 2.5K OHM JAIN 0565252UA	1309402-06
R9	POT 25K JAIN 0565253 UA	1309402-09
R1 THRU R8	POT 5K OHM 10 TURN DUNCAN	1309532-6

PARTS LIST

REVISIONS

REV.	CHG NO.	CHK
A	4	

DRN 7 Cl Sours 10JUN69
CHKD R. Russ 25Jun69
ENG. F. Gale 8/11/69
PROD. W. D'Cal 8/18/69

TRANSISTOR & DIODE CONVERSION CHART

DEC	EIA	DEC	EIA

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE ANALOG PANEL PDP-12

SIZE	CODE	NUMBER	REV.
C	CS	7005964-0-1	A

PRINTED CIRCUIT REV.

SIZE C | CODE CS | NUMBER 7005964-0-1 | REV. A

DEC FORM NO. DRC 102

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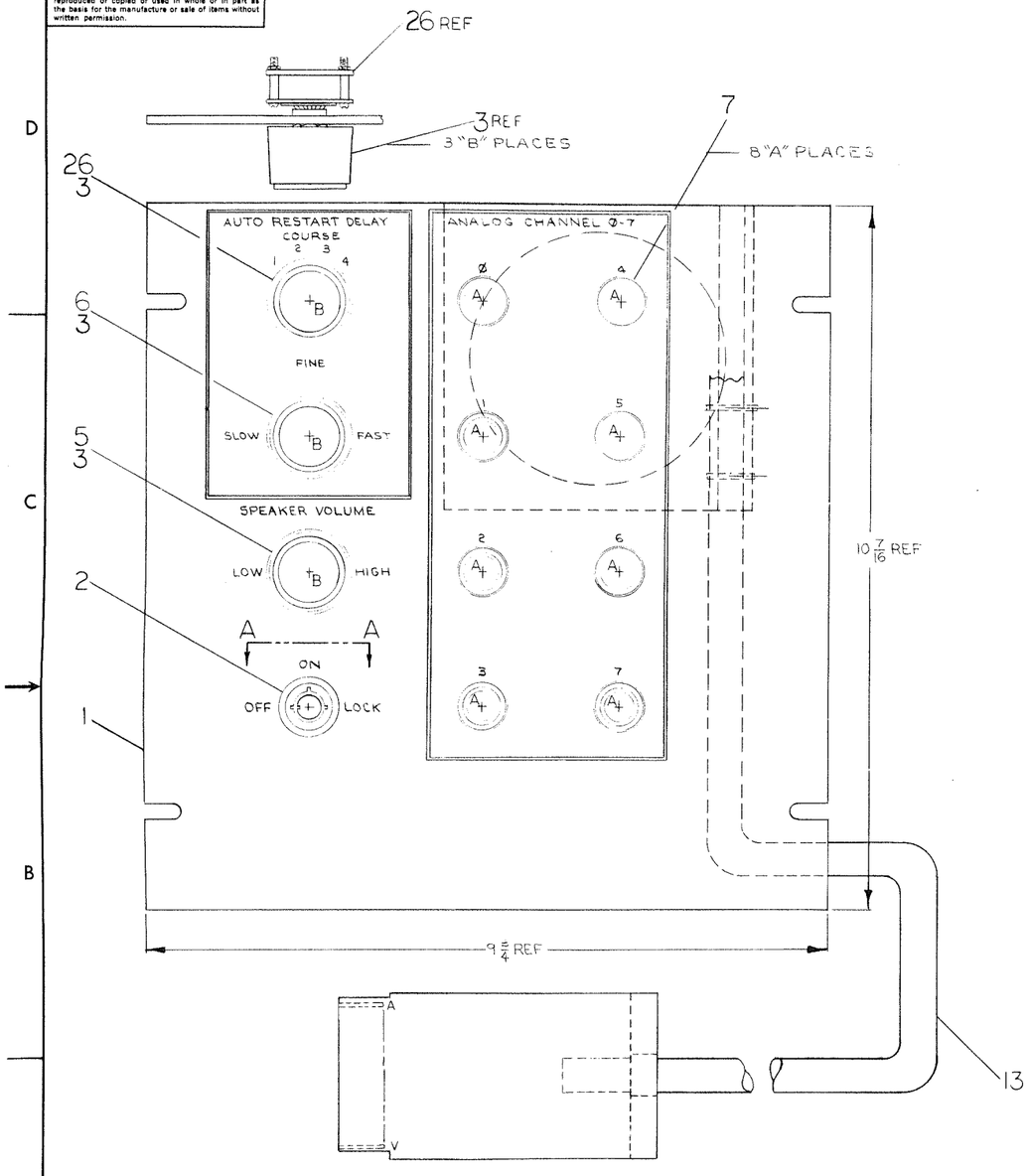
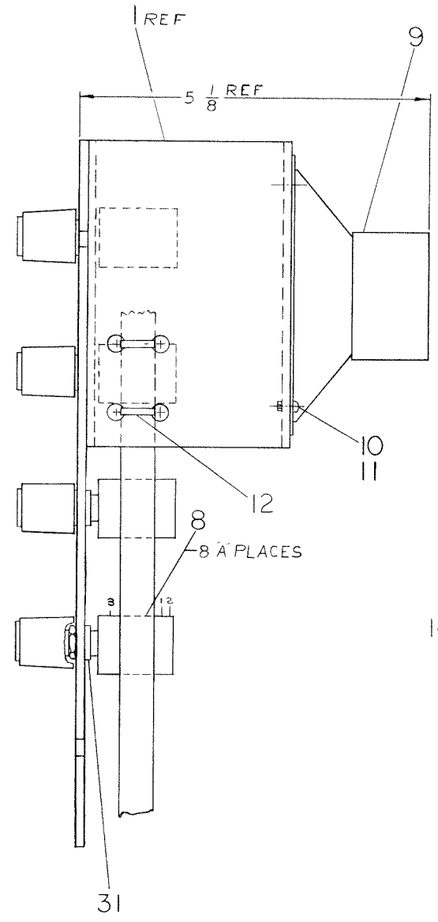
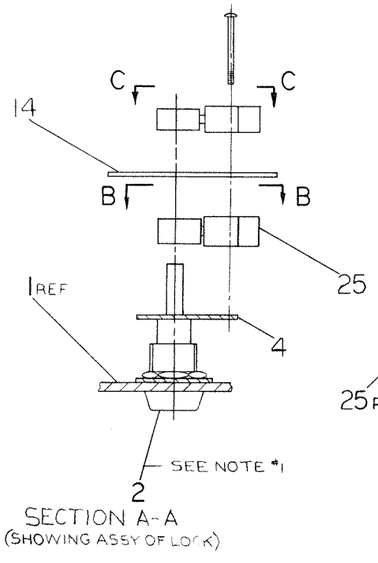
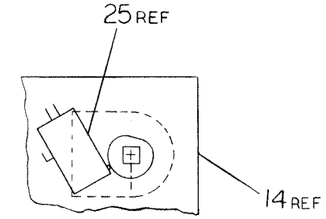
NOTES:
1. FIRST ASSEMBLE LOCKERY (ITEM #2) TO CAM (ITEM #3). AFTER LOCKERY IS INSTALLED, ROTATE CAM UNTIL "A" FLAT IS AGAINST 1ST CAM. THEN ASSEMBLE REMAINING CAM & MICROSWITCH AGAINST ITEM #14 AS SHOWN IN VIEW C-C.
2. WIRES FROM ITEM #13, NOT USED ARE TO BE CUT OFF AT CASING.
3. ATTACH GND LUG (ITEM #32) & WASHER (ITEM #34) TO SPEAKER MTG. SCREW



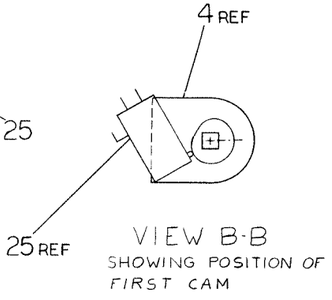




SECTION A-A
(SHOWING ASSY OF LOCK)



VIEW C-C
SHOWING POSITION OF SECOND CAM



VIEW B-B
SHOWING POSITION OF FIRST CAM

REVISIONS			
CHK	CHANGE NO.	REV	
DCB	12-00011	A	Ch per schematic L. GALE 5/21/69
R.C.	12-00054	B	T Gale 5-21-69 T Quinn 2-5-70 GALE
FV	12-00067	C	L. Bale 2/6/70 Ch per ECO 4-2-70 L. GALE
			Marble 4-7-70

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP 12		PARTS LIST		

UNLESS OTHERWISE SPECIFIED
UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINAL SURFACE QUALITY ✓
REMOVE BURRS AND BREAK SHARP CORNERS
MATERIAL
FINISH

DRN. Stan Potras	DATE 10/2/68	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
CHK'D. R. Russ	DATE 2/25/69	
ENG. L. Gale	DATE 3-5-69	TITLE: ANALOG PANEL ASSY
PROJ. ENG. L. Gale	DATE 3-3-69	
PROD. A.O. Cadl	DATE 3/5/69	
NEXT HIGHER ASSY C-UA-PDP12-0-0		SIZE D CODE AD NUMBER 7005964-0-0 REV. C
SCALE NONE		
SHEET 1 OF 2		DIST. C

DEC FORM NO. DRD 100

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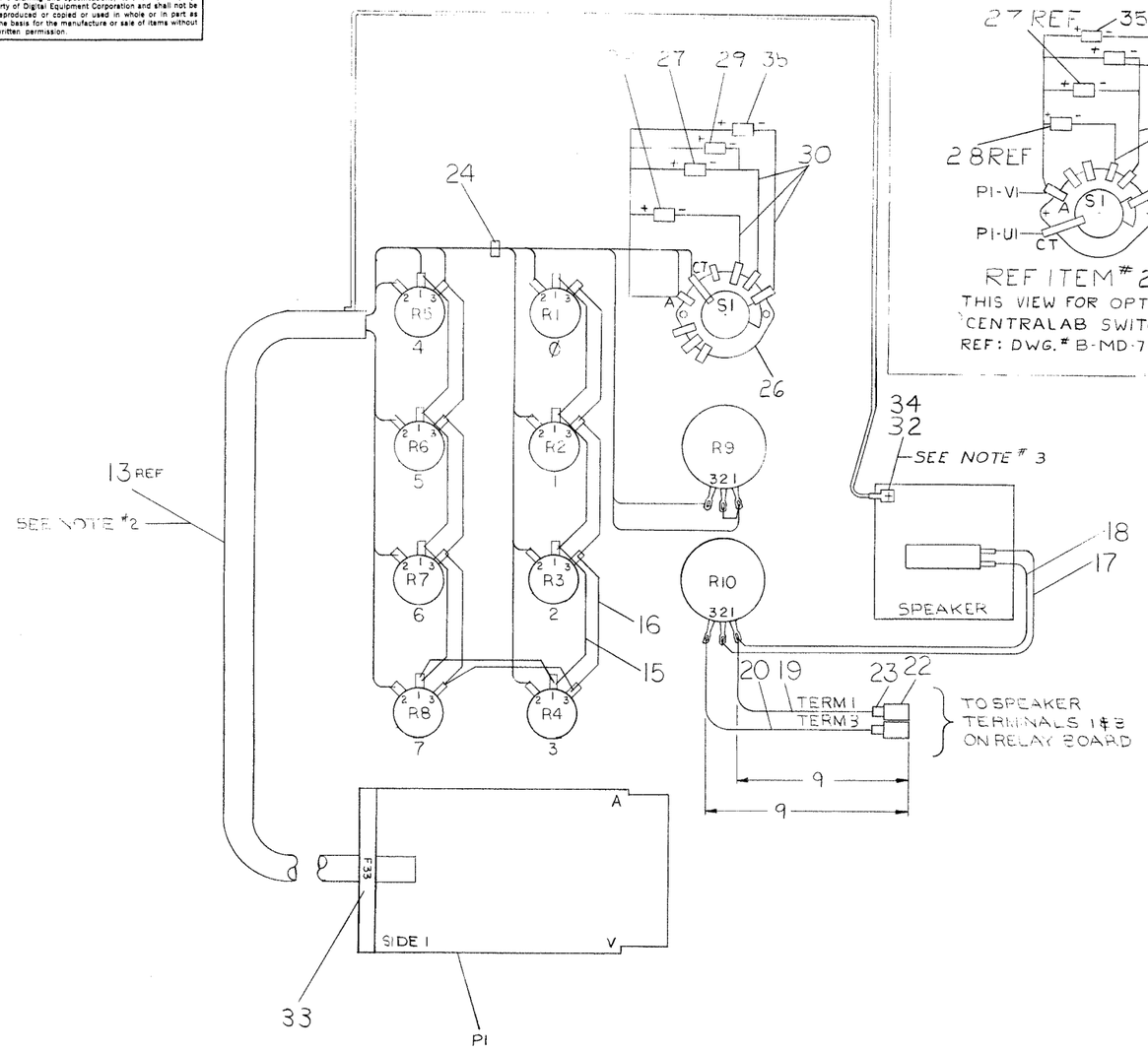

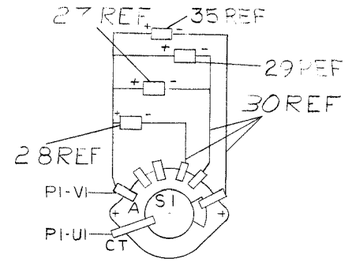

REF ITEM # 26
THIS VIEW FOR OPTIONAL REWORKED CENTRALAB SWITCH ONLY
REF: DWG. # B-MD-7407195-0-0

WIRE TABLE

ITEM NO	AWG	COLOR	FROM	TO	REMARKS	SIGNAL
13	22	BLU	P1-P1	R1-2	BLU SHIELD	CHAN Ø
		BLK	P1-N1	R2-2	PAIR # 6	CHAN 1
		YEL	P1-M1	R3-2	BLU SHIELD	CHAN 2
		BLK	P1-L1	R4-2	PAIR # 5	CHAN 3
		BLU	P1-K1	R5-2	BLU SHIELD	CHAN 4
		BLK	P1-J1	R6-2	PAIR # 4	CHAN 5
		GRN	P1-H1	R7-2	GRN SHIELD	CHAN 6
		BLK	P1-E1	R8-2	PAIR # 3	CHAN 7
		WHT	P1-D1	R5-1	RED SHIELD	-5
		BLK	P1-C1	R5-3	PAIR # 2	+5
		ORN	P1-T1	R9-3	BLU SHIELD	AUTO RESTART POT
		BLK	P1-S1	R9-1	PAIR # 7	AUTO RESTART POT
		RED	P1-U1	S1-CT	BLU SHIELD	AUTO RESTART SW
13		WHT	P1-V1	S1-A	PAIR # 8	AUTO RESTART SW
15		WHT	R1-1	R2-1		-5
			R2-1	R3-1		-5
			R3-1	R4-1		-5
			R4-1	R8-1		-5
			R8-1	R7-1		-5
			R7-1	R6-1		-5
15		WHT	R6-1	R5-1		-5
16		BLK	R1-3	R2-3		+5
			R2-3	R3-3		+5
			R3-3	R4-3		+5
			R4-3	R8-3		+5
			R8-3	R7-3		+5
			R7-3	R6-3		+5
			R6-3	R5-3		+5
16		BLK	R9-2	R9-1		AUTO RESART POT
17		GRN	SPKR	R10-2		SPKR OUTPUT
18		BRN	SPKR	R10-1		SPKR OUTPUT
19		ORN	R10-1	TERM 1		SPKR AMP OUTPUT TERM 1
20	22	VIO	R10-3	TERM 3		SPKR AMP OUTPUT TERM 3
13	22	BLK	P1-A1	SPKRGND	RED SHIELD	SYS GND
13	22	RED	P1-B1	SPKRGND	PAIR # 1	SYS GND

REVISIONS

REV.	CHANGE NO.	CHK

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
		PARTS LIST		

UNLESS OTHERWISE SPECIFIED

UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINAL SURFACE QUALITY
REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL

FINISH

DRN.	Stan Bitz	DATE 10/15/68
CHK'D	R. Russo	DATE 11/25/68
ENG.	[illegible]	DATE 12-2-68
PROJ. ENG.	[illegible]	DATE 12-3-68
PROD.	W. Call	DATE 12/3/68

NEXT HIGHER ASSY

SCALE NONE
SHEET 2 OF 2

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
ANALOG PANEL ASSY

SIZE	CODE	NUMBER	REV.
D	AD	7005964-0-0	C

DIST.

DEC FORM NO. DRD 100

SIZE D CODE AD NUMBER 7005964-0-0 REV C

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY S. POITRAS	CHECKED K. RUSS	SECTION
DATE 10/9/68	DATE 11/21/68	1
ENG L. Gale 3-3-69	PROD O'Call	ISSUED SECT.
DATE	DATE 3/3/69	1

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	QUANTITY / VARIATION
1	D-IA-7406845-0-0	ANALOG PANEL	1
2	1209236-00	SWITCH EXA-112-2 CHICAGO LOCK CO.(BARREL)	1
3	1209244	KNOB, BUCKEYE SS-125L-2	3
4	1209236-01	BRACKET CHICAGO LOCK	1
5	1309402-06	POT 2.5K OHM #JAIN056S252UA A-B	1
6	1309402-09	POT 25K OHM #JAIN056S253UA A-B	1
7	1209245	KNOB, BUCKEYE SSN 70-2	8
8	1309532-6	POT. 5K OHM 10 TURN DUNCAN	8
9	1204880	SPEAKER 4 BMS-45, 45 OHM 3W OXFORD	1
10	9006022-1	SCR PHL PAN HD #6-32 x 3/8 LG	4
11	9006560	KEPS NUT #6-32	4
12	9007032	TIEWRAP #SST-2-B PANDUIT	2
13	C-IA-7006028-1-0	CABLE ASSEMBLY (G783)	1
14	B-MD-7407049-0-0	INSULATOR, SWITCH	1
15	9107350-10	WIRE #22 AWG STRD TEF INS (WHT)	A/R
16	9107350-1	WIRE #22 AWG STRD TEF INS (BLK)	A/R
17	9107350-6	WIRE #22 AWG STRD TEF INS (GRN)	A/R
18	9107350-2	WIRE #22 AWG STRD TEF INS (BRN)	A/R
19	9107350-4	WIRE #22 AWG STRD TEF INS (ORN)	A/R
20	9107350-8	WIRE #22 AWG STRD TEF INS (VIO)	A/R
~~21~~	~~9107252~~	~~TUBING SHRINKABLE WHT 3/8~~	A/R
22	9006997	FASTON TAB #42025-1	2

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO.
ANALOG PANEL ASSY	D-AD-7005964-0-0	A	PL	7005964-0-0	C	12-00067
	SHEET 1 OF 2	DIST. 6				

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY S. POITRAS	CHECKED K. RUSS	SECTION
DATE 10/9/68	DATE 11/21/68	1
ENG L. Gale 3-3-69	PROD O'Call	ISSUED SECT.
DATE	DATE 3/3/69	1

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	QUANTITY / VARIATION
~~23~~	~~9107255~~	~~TUBING WHT SHRINKABLE 1/8 O.D.~~	A/R
24	9007031	TY. WRAP #SST-1-B PANDUIT	A/R
25	1209355	MICRO SW #6831 "MICRO"	2
** 26	B-MD-7407195-0-0	SWITCH CENTRALAB (REWORK)	1
26	1209394	SWITCH CENTRALAB PA-020	1
27	1005965	CAPACITOR .47 uf 35V 10%	1
28	1000050	CAPACITOR .033 MFD 100V 10%	1
29	1002180	CAPACITOR .15 MFD 35V 10%	1
30	9107256-02	TUBING #22 AWG TEF (BRN)	A/R
31	9006680	WASHER .401 ID X .812 OD	8
32	9007634	SOLDERLESS CONN #36242	1
33	A-DC-7407193-0-0	LOGIC DECAL	A/R
34	9007649	WASHER EXT TOOTH #6	1
35	1004813	CAPICITOR 10 MFD 20 V 10%	1
**	OPTIONAL SWITCH SEE ASSY DWG.		

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO.
ANALOG PANEL ASSY	D-AD-7005964-0-0	A	PL	7005964-0-0	C	
	SHEET 2 OF 2	DIST. 6				

DEC FORM NO.
DRA 110

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MASTER DRAWING LIST

DWG. NO.	REV. LET.	NO. OF SHEETS	TITLE
A-ML-AD12-0	REF	1	ANALOG TO DIGITAL CONVERTER
D-BS-AD12-0-YAD	REF	1	A-D CONVERTER
D-BS-AD12-0-YADA	REF	1	YADA CHAN 10-17
D-BS-AD12-0-YADB	REF	1	YADB CHAN 20-37
D-BS-AD12-0-YADC	REF	1	YADC A-D CONTROL
D-MU-EM12-0-1	REF	1	MODULE UTILIZATION MEMORY
D-MU-EM12-0-2	REF	1	MODULE UTILIZATION MEMORY
A-PL-EM12-0-1	REF	1	MODULE COUNT
A-PL-EM12-0-2	REF	1	MODULE COUNT
D-AD-7006046-0-0	A	2	ANALOG EXTENSION PANEL
A-PL-7006046-0-0	A	1	ANALOG EXTENSION PANEL (PL)

REVISIONS			
REV.	DATE	CHG. NO.	APP'D.
A	7/70	EM12-37	L.G.

DRN.	K.RUSS	DATE 8/1/69
CHK'D.	K.RUSS	DATE 8/1/69
ENG.	L. Gale	DATE 8/11/69
PROJ. ENG.	L. Gale	DATE 8/11/69
PROD	D Call	DATE 8/18/69

FIRST USED ON: PDP12

SCALE: H

SHEET 1 OF 1

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE: A-D ADDITIONAL PREAMPS

SIZE	CODE	NUMBER	REV.
A	ML	AG12-0	A

DIST.

DEC FORM NO. DRA 103

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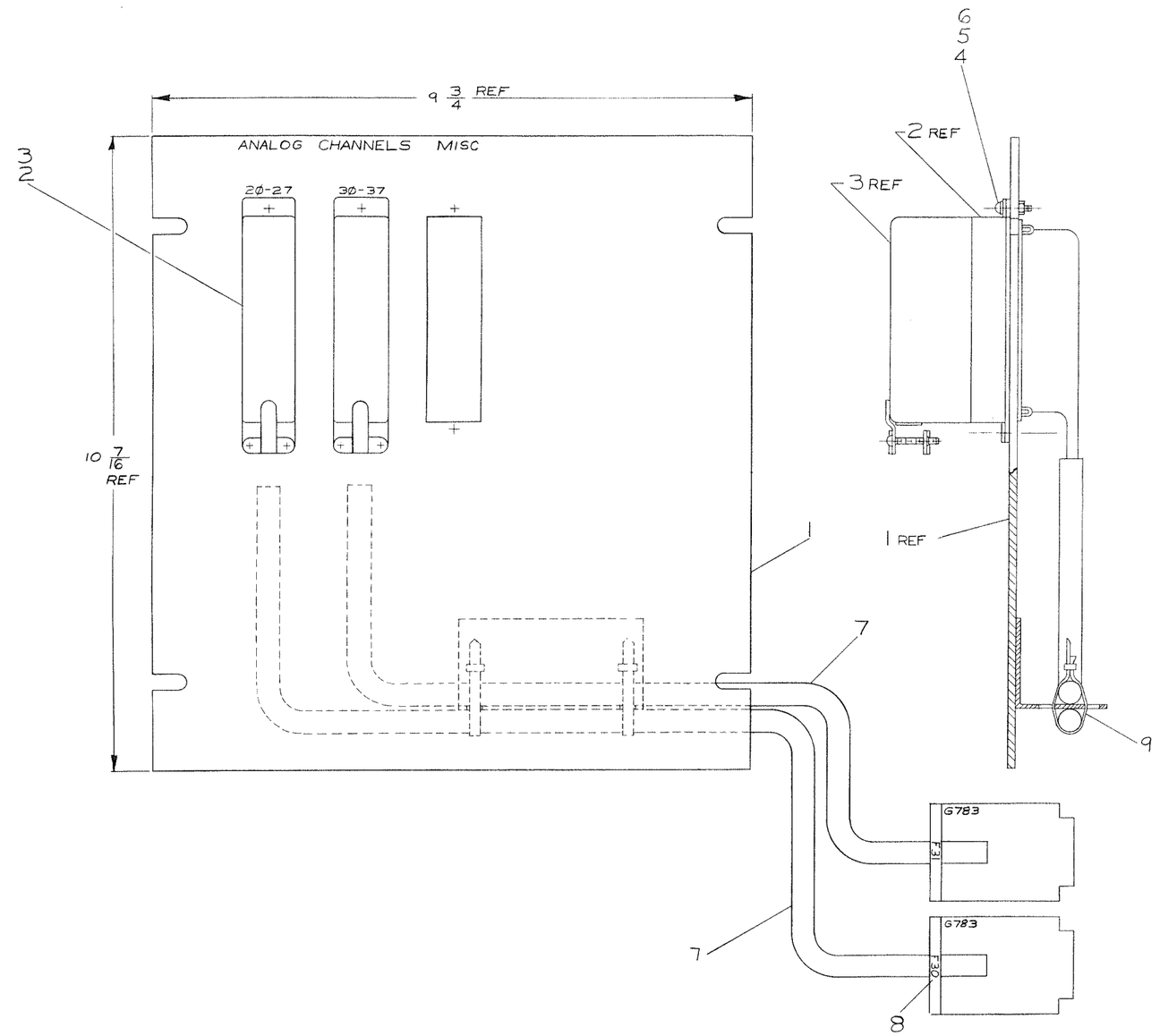

REVISIONS			
CHK	CHANGE NO.	REV.	
T.Q.A.	AM12-00001	A	T.Quillen 8-1-69
			GALE
			8/15/69

DEC FORM NO. DRD 100

FIRST USED ON OPTION/MODEL: PDP 12

QTY.	DESCRIPTION	PART NO.	ITEM NO.
	PARTS LIST		

UNLESS OTHERWISE SPECIFIED

UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINAL SURFACE QUALITY √
REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL —

FINISH —

DRN.	Cook	DATE 2/28/69
CHK'D	R. Russ	DATE 2/28/69
ENG.	G. C.	DATE 2/3/69
PROJ. ENG.	G. C.	DATE 2/3/69
PROD.	W. Call	DATE 3/3/69

NEXT HIGHER ASSY: A-ML-AG12-Ø

SCALE —

SHEET 1 OF 2

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: ANALOG EXT PANEL ASSY (AG12)

SIZE	CODE	NUMBER	REV.
D	AD	7006046-0-0	A

DIST.

SIZE D | CODE AD | NUMBER 7006046-0-0 | REV A

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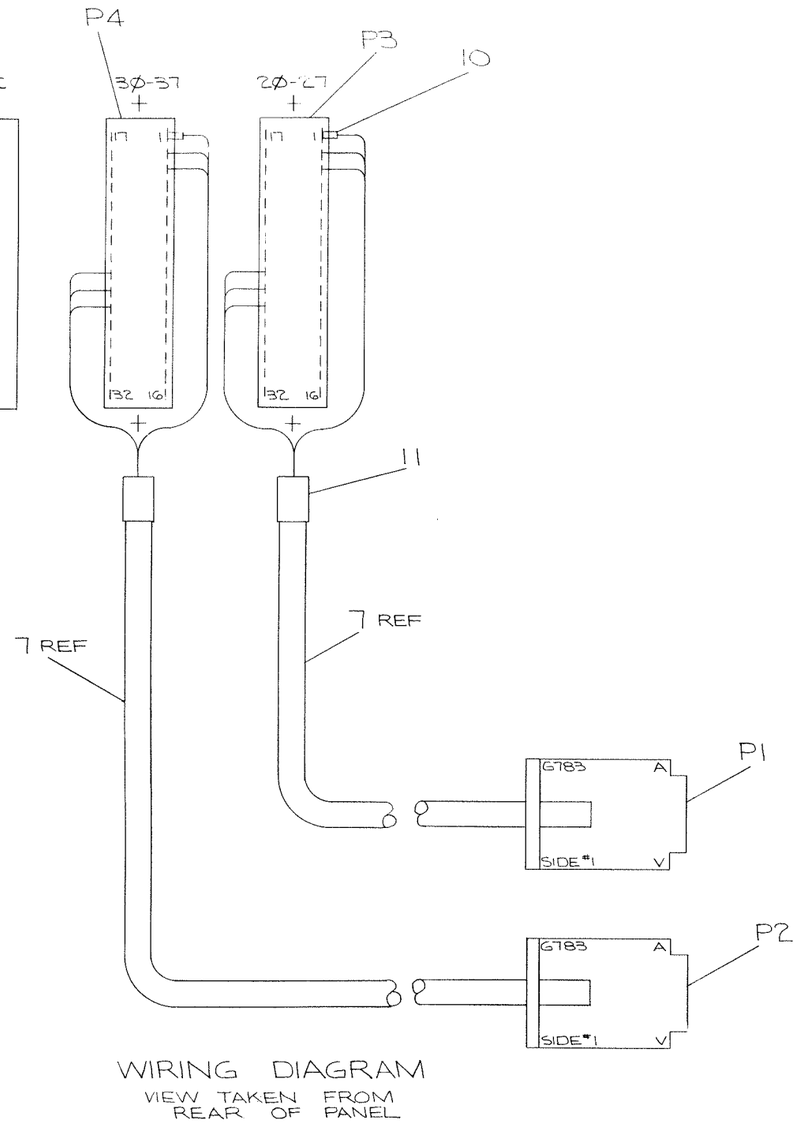

WIRING DIAGRAM
VIEW TAKEN FROM REAR OF PANEL

WIRE TABLE

ITEM NO.	DESCRIPTION AWG	COLOR	CONNECTIONS FROM	TO	REMARKS	SIGNAL
7	22	BLK	P1-A1	P3-1	RED SHIELD PAIR #1	-CHAN 20
		RED	P1-B1	-2		+CHAN 20
		DRAIN	GND	-3		SYS GND
		BLK	P1-C1	-4	RED SHIELD PAIR #2	-CHAN 21
		WHT	P1-D1	-5		+CHAN 21
		DRAIN	GND	-6		SYS GND
		BLK	P1-E1	-7	GRN SHIELD PAIR #3	-CHAN 22
		GRN	P1-H1	-8		+CHAN 22
		DRAIN	GND	-9		SYS GND
		BLK	P1-J1	-10	BLU SHIELD PAIR # 4	-CHAN 23
		BLU	P1-K1	-11		+CHAN 23
		DRAIN	GND	-12		SYS GND
		BLK	P1-L1	-13	BLU SHIELD PAIR #5	-CHAN 24
		YEL	P1-M1	-14		+CHAN 24
		DRAIN	GND	-15		SYS GND
		BLK	P1-N1	-16	BLU SHIELD PAIR #6	-CHAN 25
		BRN	P1-P1	-32		+CHAN 25
		DRAIN	GND	-31		SYS GND
		BLK	P1-S1	-30	BLU SHIELD PAIR #7	-CHAN 26
		ORN	P1-T1	-29		+CHAN 26
		DRAIN	GND	-28		SYS GND
		RED	P1-U1	-27	BLU SHIELD PAIR #8	-CHAN 27
		WHT	P1-V1	-26		+CHAN 27
7	22	DRAIN	GND	-25		SYS GND
				-24		
				-23		
				-22		
				-21		
				-20		
				-19		
				-18		
				P3-17		
7	22	BLK	P2-A1	P4-1	RED SHIELD PAIR #1	-CHAN 30
		RED	P2-B1	-2		+CHAN 30
		DRAIN	GND	-3		SYS GND
		BLK	P2-C1	-4	RED SHIELD PAIR #2	-CHAN 31
		WHT	P2-D1	-5		+CHAN 31
		DRAIN	GND	-6		SYS GND
		BLK	P2-E1	-7	GRN SHIELD PAIR #3	-CHAN 32
		GRN	P2-H1	-8		+CHAN 32
		DRAIN	GND	-9		SYS GND
		BLK	P2-J1	-10	BLU SHIELD PAIR # 4	-CHAN 33
		BLU	P2-K1	-11		+CHAN 33
		DRAIN	GND	-12		SYS GND
		BLK	P2-L1	-13	BLU SHIELD PAIR #5	-CHAN 34
		YEL	P2-M1	-14		+CHAN 34
		DRAIN	GND	-15		SYS GND
		BLK	P2-N1	-16	BLU SHIELD PAIR #6	-CHAN 35
		BRN	P2-P1	-32		+CHAN 35
		DRAIN	GND	-31		SYS GND
		BLK	P2-S1	-30	BLU SHIELD PAIR #7	-CHAN 36
		ORN	P2-T1	-29		+CHAN 36
		DRAIN	GND	-28		SYS GND
		RED	P2-U1	-27	BLU SHIELD PAIR #8	-CHAN 37
		WHT	P2-V1	-26		+CHAN 37
7	22	DRAIN	GND	-25		SYS GND
				-24		
				-23		
				-22		
				-21		
				-20		
				-19		
				-18		
				P4-17		

SIZE D | CODE AD | NUMBER 7006046-0-0 | REV A

REVISIONS | REV. | CHANGE NO. | CHK

FIRST USED ON OPTION/MOD

PARTS LIST | QTY. | DESCRIPTION | PART NO. | ITEM NO.

UNLESS OTHERWISE SPECIFIED
UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 | FRACTIONS ± 1/64 | ANGLES ± 0°30'
FINAL SURFACE QUALITY
REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL —//—

FINISH —//—

DRN.	R. Cook	DATE 2/28/69
CHK'D	R. Russo	DATE 2/28/69
ENG.	L. L.	DATE 2/28/69
PROJ. ENG.	L. L.	DATE 3/5/69
PROD.	W. J. Cook	DATE 3/9/69

NEXT HIGHER ASSY

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE
ANALOG EXT PANEL ASSY (AG12)

SIZE D | CODE AD | NUMBER 7006046-0-0 | REV A

SCALE —//—

SHEET 1 OF 2

DIST.

DEC FORM NO. DRD 100

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY W.F. McCARTHY DATE 12/2/68	CHECKED K. RUSS DATE 12/11/68	SECTION 1
ENG DATE L. Yoki 3-3-69	PROD D Call DATE 3/3/69	ISSUED SECT. 1

ITEM NO.	DWG NO./PART NO.	DESCRIPTION	QUANTITY/VARIATION
1	D-IA-7406819-0-0	ANALOG EXT PANEL	1
2	120357**8**	CONN BLUE RIBBON #26-4401-32**P** AMP	2
3	120358**4**	CONN BLUE RIBBON #26-4501-32**S** AMP	2
4	9006010-1	SCR PHL HD PAN #4-40 x 5/16 LG	4
5	9006557	NUT KEPS #4-40	4
6	9006632	WASH INT TOOTH #4	**4**
7	C-IA-7006028-**2**-0	CABLE ASSY (G783)	**2**
8	A-DC-7407193-0-0	LOGIC DECALS	A/R
9	9007032	TIE WRAP #SST-2-B PANDUIT	2
10	9107255	TUBING SHRINKABLE WHT 1/8 DIA	A/R
11	9107252	TUBING SHRINKABLE WHT 3/8 DIA	A/R

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO.
ANALOG EXT PANEL ASSY (A612)	D-AD-7006046-0-0	A	PL	7006046-0-0	A	AM12-00001
	SHEET 1 OF 1	DIST.				

DEC FORM NO.
DRA 110

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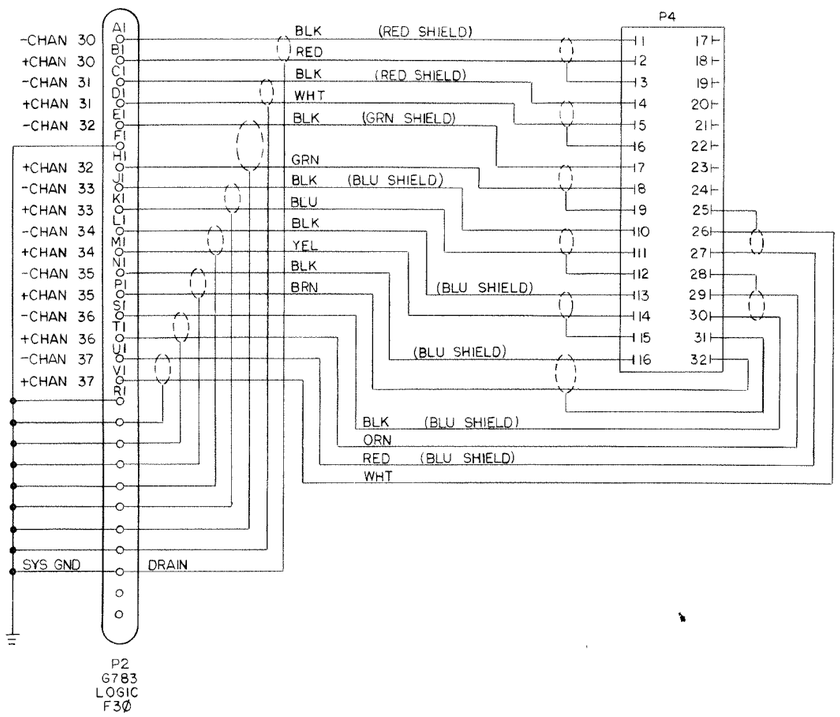

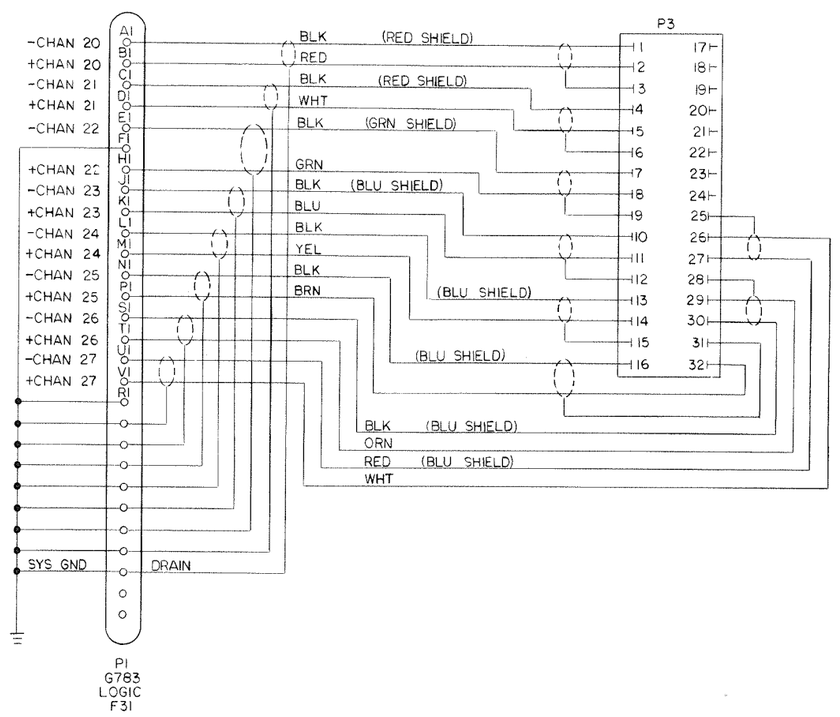

NOTE: WIRE IS BELDEN CABLE #8774

REF DESIGNATION	DESCRIPTION	PART NO.
P3, P4	CONN #26-4401-32P-AMP	1203578
P1, P2	G783 CABLE CONN.	G783

PARTS LIST

REVISIONS			
CHN	CHG NO	REV	

DRN	R.T. Hall	DATE 8/14/69
CHK	R.W. Russ	DATE 8/16/69
ENG	L. Sale	DATE 8/18/69
PROD	D. Call	DATE 8/18/69

TRANSISTOR & DIODE CONVERSION CHART

DEC	EIA	DEC	EIA

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE ANALOG EXT PANEL PDP 12

SIZE D | CODE CS | NUMBER 7006046-0-1 | REV.

PRINTED CIRCUIT REV.

DEC FORM NO. DRD 101

P1 & P2

REV. | SIZE D | CODE CS | NUMBER 7006046-0-1

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MASTER DRAWING LIST

DWG. NO.	REV. LET.	NO. OF SHEETS	TITLE
A-ML-AD12-0	REF	1	ANALOG TO DIGITAL CONVERTER
D-BS-AD12-0-YAD	REF	1	A-D CONVERTER
D-BS-AD12-0-YADA	REF	1	YADA CHAN 10-17
D-BS-AD12-0-YADB	REF	1	YADB CHAN 20-37
D-BS-AD12-0-YADC	REF	1	YADC A-D CONTROL
D-MU-EM12-0-1	REF	1	MODULE UTILIZATION MEMORY
D-MU-EM12-0-2	REF	1	MODULE UTILIZATION MEMORY
A-PL-EM12-0-1	REF	1	MODULE COUNT
A-PL-EM12-0-2	REF	1	MODULE COUNT

REVISIONS			
REV.	DATE	CHG. NO.	APP'D.

DRN. K. RUSS	DATE 8/1/69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. K. RUSS	DATE 8/1/69	
ENG. L. Gale	DATE 8/11/69	TITLE EXPANDED MULTIPLEXER
PROJ. ENG. L. Gale	DATE 8/11/69	
PROD. W Call	DATE 8/18/69	
FIRST USED ON PDP 12		SIZE A / CODE ML / NUMBER AM12-0 / REV.
SCALE H		
SHEET 1 OF 1		DIST.

DEC FORM NO. DRA 103

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MASTER DRAWING LIST

DWG. NO.	REV. LET.	NO. OF SHEETS	TITLE
A-ML-EP12-0	REF	2	PDP 12 PROCESSOR
D-MU-EP12-0-1	REF	2	MODULE UTILIZATION PROC.
~~D-MU-EP12-0-2~~	~~REF~~	~~1~~	~~MODULE UTILIZATION PROC.~~
A-PL-EP12-0-1	REF	3	MODULE COUNT
~~A-PL-EP12-0-2~~	~~REF~~	~~1~~	~~MODULE COUNT~~
D-BS-EP12-0-IOR	REF	1	RELAY BUFFER
D-AD-7005963-0-0	D	1	RELAY PANEL ASSY
A-PL-7005963-0-0	D	1	RELAY PANEL ASSY (PL)
D-CS-7005963-0-1	B	1	RELAY PANEL CIRCUIT SCHEMATIC

REVISIONS			
REV.	DATE	CHG. NO.	APP'D.
A	7/71	12-96	F.V.
B	1/72	EP12-44	R.M.

DRN. K. RUSS	DATE 8/4/69	
CHK'D. K. RUSS	DATE 8/4/69	
ENG. L. Gale	DATE 8/11/69	
PROJ. ENG. L. Gale	DATE 8/11/69	
PROD. W. Cull	DATE 8/18/69	
FIRST USED ON PDP 12		
SCALE —H—		
SHEET 1 OF 1		

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
RELAY BUFFER

SIZE	CODE	NUMBER	REV.
A	ML	DR12-0	B

DIST.

DEC FORM NO. DRA 103

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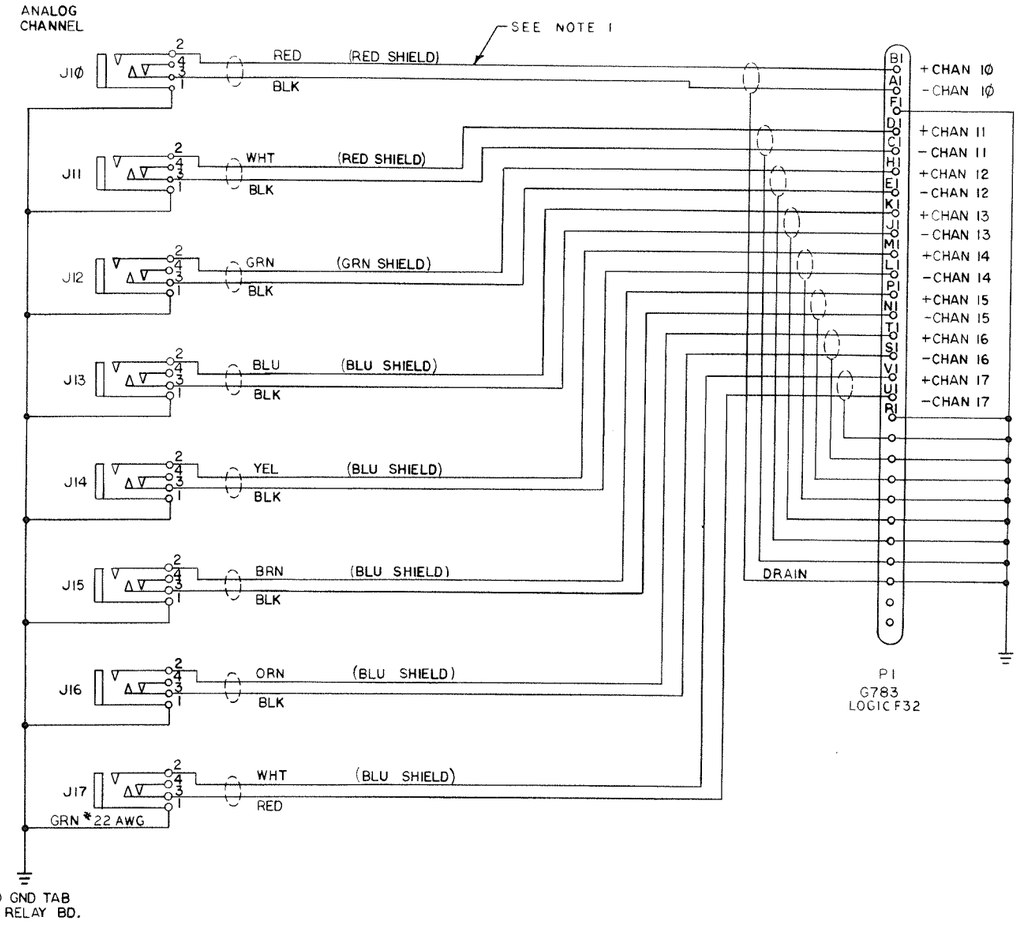
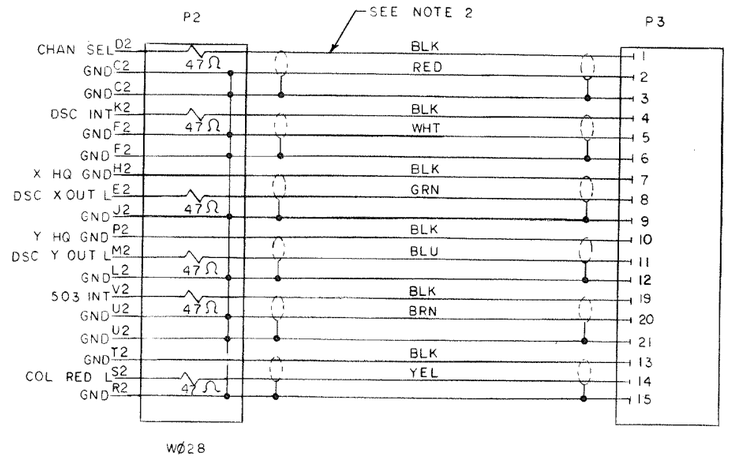
NOTES:
1. WIRE IS BELDEN CABLE #8774
2. WIRE IS BELDEN CABLE #8778





REF. DESIGNATION	DESCRIPTION	PART NO.
P2	W028 CABLE ASSY.	7007005-7E-0
P3	CONN BLU RIBBON 26-4401-24P	1209265
P1	G783 CABLE CONN.	G783
J1Ø THRU J17	JAX 13-B 3 COND SWITCHCRAFT	1203562

PARTS LIST

REVISIONS	CHK	CHG NO.	REV
	FV	DCO62	A
		5316	B

DRN F Fleming 8/13/69
CHK D Williams 8-19-69
ENG K. Hale 8-18-69
PROD P Call 8/18/69

TRANSISTOR & DIODE CONVERSION CHART

DEC	EIA	DEC	EIA

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE RELAY PANEL PDP 12
SIZE D | CODE CS | NUMBER 7005963-0-1 | REV B
PRINTED CIRCUIT REV.

SIZE D | CODE CS | NUMBER 7005963-0-1 | REV B

DEC FORM NO. DRD 101

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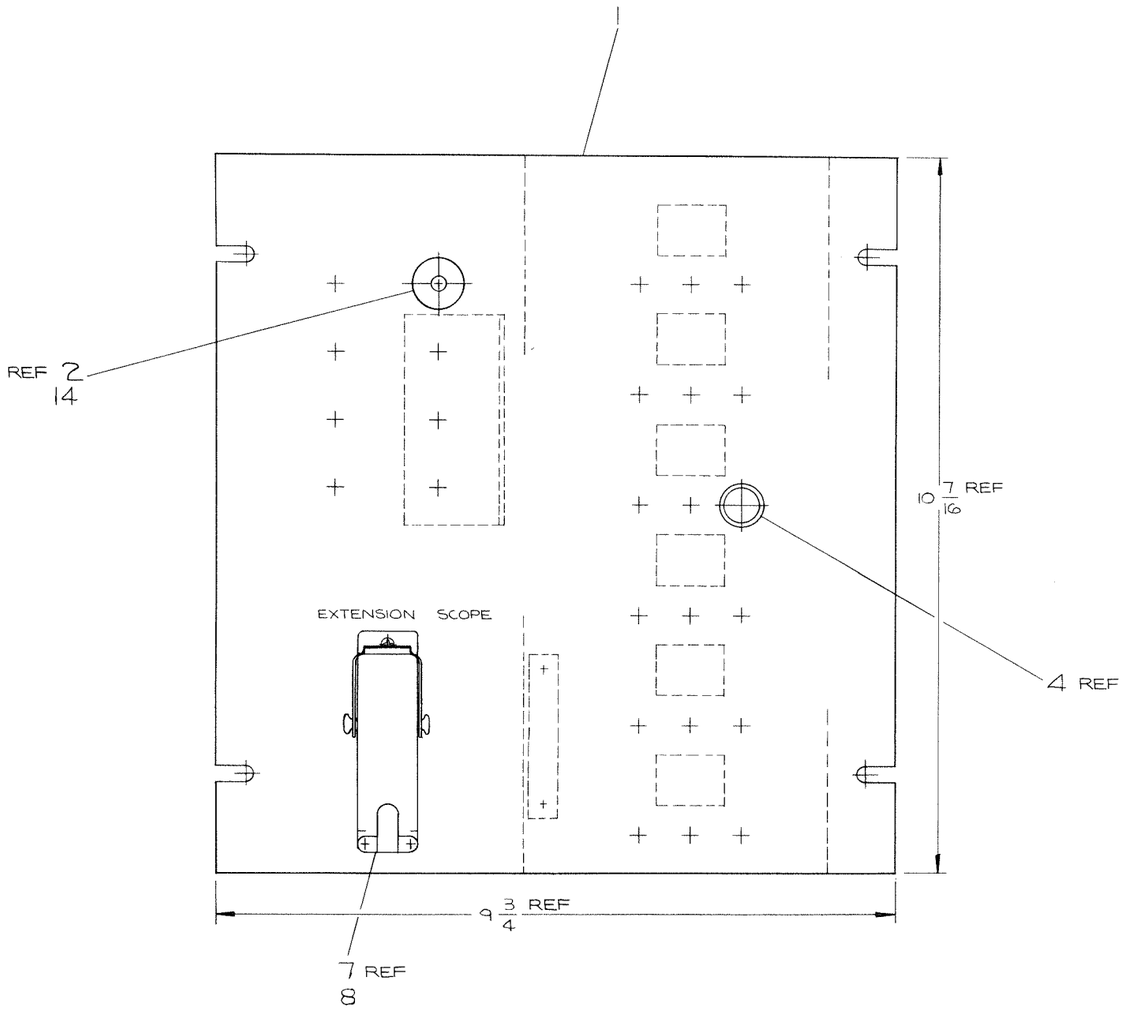
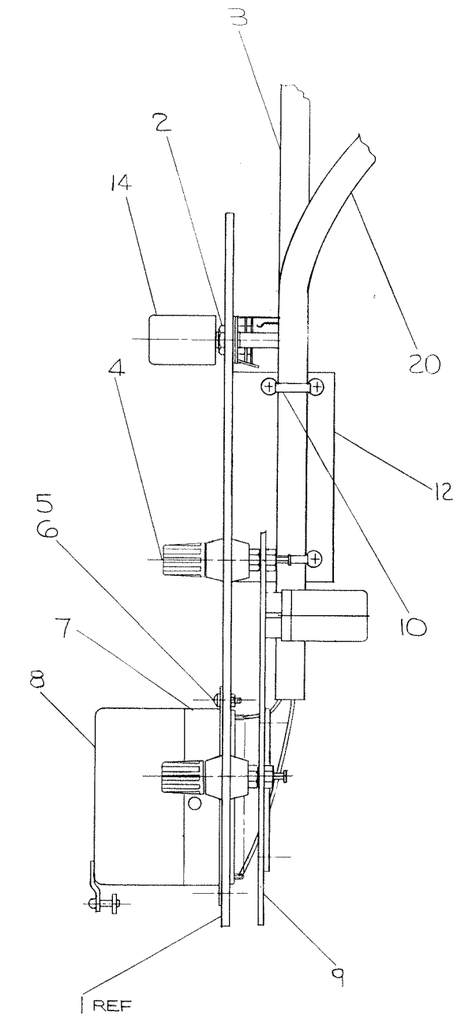
NOTES:
1. ALL WIRES FROM ITEM # 3 NOT USED ARE TO BE CUT OFF AT CASING.





REVISIONS		
CHK	CHANGE NO.	REV.
[illegible]	DRI2-00001	A
	Tested 7-2-69 GALE	
	Tested 8/5/69	B
	12-00026	
	L. GALE	
	Tested 8/26/69	C
FV	12-00082	
	G BUDIANSKY	
	Tested 12-00096	D
	R. MOCHE	
	Dr Eng 8-12-71	

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP12		PARTS LIST		

UNLESS OTHERWISE SPECIFIED
UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINAL SURFACE QUALITY
REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL —//—

FINISH —//—

DRN.	DTiO	DATE 11-21-68
CHK'D.	R Russ	DATE 11-22-68
ENG.	[illegible]	DATE 3-3-69
PROJ. ENG.	[illegible]	DATE 3-3-69
PROD.	[illegible]	DATE 3/3/69

NEXT HIGHER ASSY
A-ML-DRI2-Ø

SCALE —//—

SHEET 1 OF 2

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
RELAY PANEL ASSY (DRI2)

SIZE	CODE	NUMBER	REV.
D	AD	7005963-0-0	D

DIST.

DEC FORM NO. DRD 100

SIZE D AD 7005963-0-0 REV D

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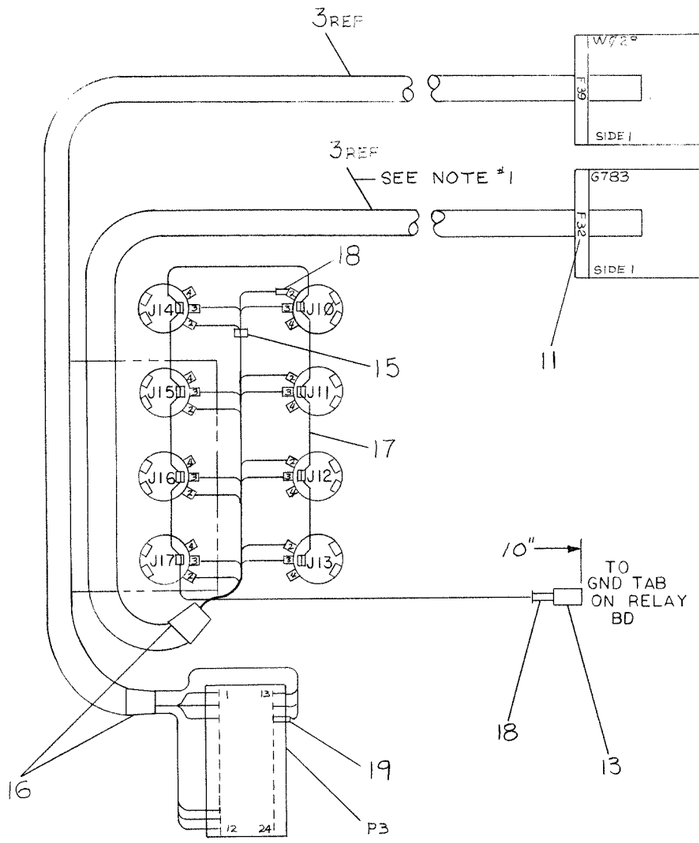

WIRING DIAGRAM
VIEW LOOKING AT REAR OF PANEL

WIRE TABLE

ITEM NO	DESCRIPTION AWG	COLOR	CONNECTIONS FROM	TO	REMARKS	SIGNAL
3	22	BLK	P1-A1	J10-2	RED SHIELD PAIR#1	-CHAN 10
		RED	P1-B1	J10-3		+CHAN 10
		DRAIN	GND	OPEN		
		BLK	P1-C1	J11-2	RED SHIELD PAIR#2	-CHAN 11
		WHT	P1-D1	J11-3		+CHAN 11
		DRAIN	GND	OPEN		
		BLK	P1-E1	J12-2	GRN SHIELD PAIR#3	-CHAN 12
		GRN	P1-H1	J12-3		+CHAN 12
		DRAIN	GND	OPEN		
		BLK	P1-J1	J13-2	BLU SHIELD PAIR#4	-CHAN 13
		BLU	P1-K1	J13-3		+CHAN 13
		DRAIN	GND	OPEN		
		BLK	P1-L1	J14-2	BLU SHIELD PAIR#5	-CHAN 14
		YEL	P1-M1	J14-3		+CHAN 14
		DRAIN	GND	OPEN		
		BLK	P1-N1	J15-2	BLU SHIELD PAIR#6	-CHAN 15
		BRN	P1-P1	J15-3		+CHAN 15
		DRAIN	GND	OPEN		
		BLK	P1-S1	J16-2	BLU SHIELD PAIR#7	-CHAN 16
		ORN	P1-T1	J16-3		+CHAN 16
		DRAIN	GND	OPEN		
		RED	P1-U1	J17-2	BLU SHIELD PAIR#8	-CHAN 17
		WHT	P1-V1	J17-3		+CHAN 17
3	22	DRAIN	GND	OPEN		
17	22	GRN	J17-1	J16-1		SYS GND
			J16-1	J15-1		
			J15-1	J14-1		
			J14-1	J10-1		
			J10-1	J11-1		
			J11-1	J12-1		
			J12-1	J13-1		
17	22	GRN	J17-1	GND TAB		SYS GND
3	22	BLK	P2-D2*	P3-1	PAIR#1	CHAN SEL
		RED	GND	P3-2		GND
		DRAIN	GND	P3-3		SHIELD
		BLK	P2-K2*	P3-4	PAIR#2	DSC INT
		WHT	GND	P3-5		GND
		DRAIN	GND	P3-6		SHIELD
		BLK	P2-H2	P3-7	PAIR# 3	X HQ GND
		GRN	P2-E2*	P3-8		DSC X OUT L
		DRAIN	GND	P3-9		SHIELD
		BLK	P2-P2	P3-10	PAIR# 4	Y HQ GND
		BLU	P2-M2*	P3-11		DSC Y OUTL
		DRAIN	GND	P3-12		SHIELD
		BLK	P2-T2	P3-13	PAIR#5	GND
		YEL	P2-S2	P3-14		COL RED L
		DRAIN	GND	P3-15		SHIELD
				P3-16		
				P3-17	NOT USED	
				P3-18		
		BLK	P2-V2*	P3-19	PAIR#6	503 INT
		BRN	GND	P3-20		GND
		DRAIN	GND	P3-21		SHIELD
				P3-22		
				P3-23	NOT USED	
3	22			P3-24		

* THROUGH 47Ω RESISTOR

REVISIONS | REV. | CHANGE NO. | CHK

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
		PARTS LIST		

UNLESS OTHERWISE SPECIFIED
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 | FRACTIONS ± 1/64 | ANGLES ± 0°30'
FINAL SURFACE QUALITY
REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL

FINISH

DRN. Stan Pratt	DATE	11/22/68
CHK'D. R Russ	DATE	11/22/68
ENG.	DATE	
PROJ. ENG.	DATE	3-21-69
PROD.	DATE	
NEXT HIGHER ASS'Y		
SCALE NONE		
SHEET 2 OF 2		

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: RELAY PANEL ASS'Y (DR12)

SIZE D | CODE AD | NUMBER 7005963-0-0 | REV D

DIST.

DEC FORM NO. DRD 100

SIZE D | CODE AD | NUMBER 7005963-0-0 | REV D

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY R. COOK	CHECKED K. RUSS	SECTION
DATE 10/8/68	DATE ~~11~~/11/68	1
ENG DATE L. Gale 3/3/69	PROD DATE W Cole 3/3/69	ISSUED SECT. 1

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	QUANTITY / VARIATION
1	D-IA-7406846-0-0	PANEL RELAY	1
2	1203562	JAX #13-B 3 COND SWITCH CRAFT	8
3	C-IA-7006028-1-0	CABLE ASSY G783	1
4	1209352-02	BINDER POST #DF31 WTC SUPERIOR ELEC.	18
5	9006010-1	SCR PHL HD PAN #4-40 x 5/16 LG	2
6	9006557	NUT KEPS #4-40	2
7	1209265	CONN BLU RIBBON #26-4401-24P AMP	1
8	1209277	CONN BLU RIBBON #26-4501-24S AMP	1
9	C-AD-7006047-0-0	RELAY BD. ASSY	1
10	9007032	TIE WRAP #SST-2-B PANDUIT	2
11	A-DC-7407193-0-0	LOGIC DECALS	A/R
12	B-MD-7406901-0-0	CABLE BRACKET	1
13	9006997	FASTON TAB #42025-1	1
14	1209430	PHONE PLUG #90 SWITCH CRAFT	8
15	9007031	TIE WRAP #SST-1-B PANDUIT	A/R
16	9107252	TUBING SHRINKABLE WHT 3/8 DIA	A/R
17	9107350-6	WIRE #22 AWG STRD TEF/INS (GRN)	A/R
18	9107305	TUBING SHRINKABLE RED 3/16 DIA	A/R
19	9107255	TUBING SHRINKABLE WHT 1/8 DIA	A/R
20	C-IA-7007005-7E-0	CABLE ASSY WC28	1

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO.
RELAY PANEL ASSY (DRI2)	D-AD-7005963-0-0	A	PL	7005963-0-0	D	12-00096
	SHEET 1 OF 1	DIST. 6				

DEC FORM NO.
DRA 110

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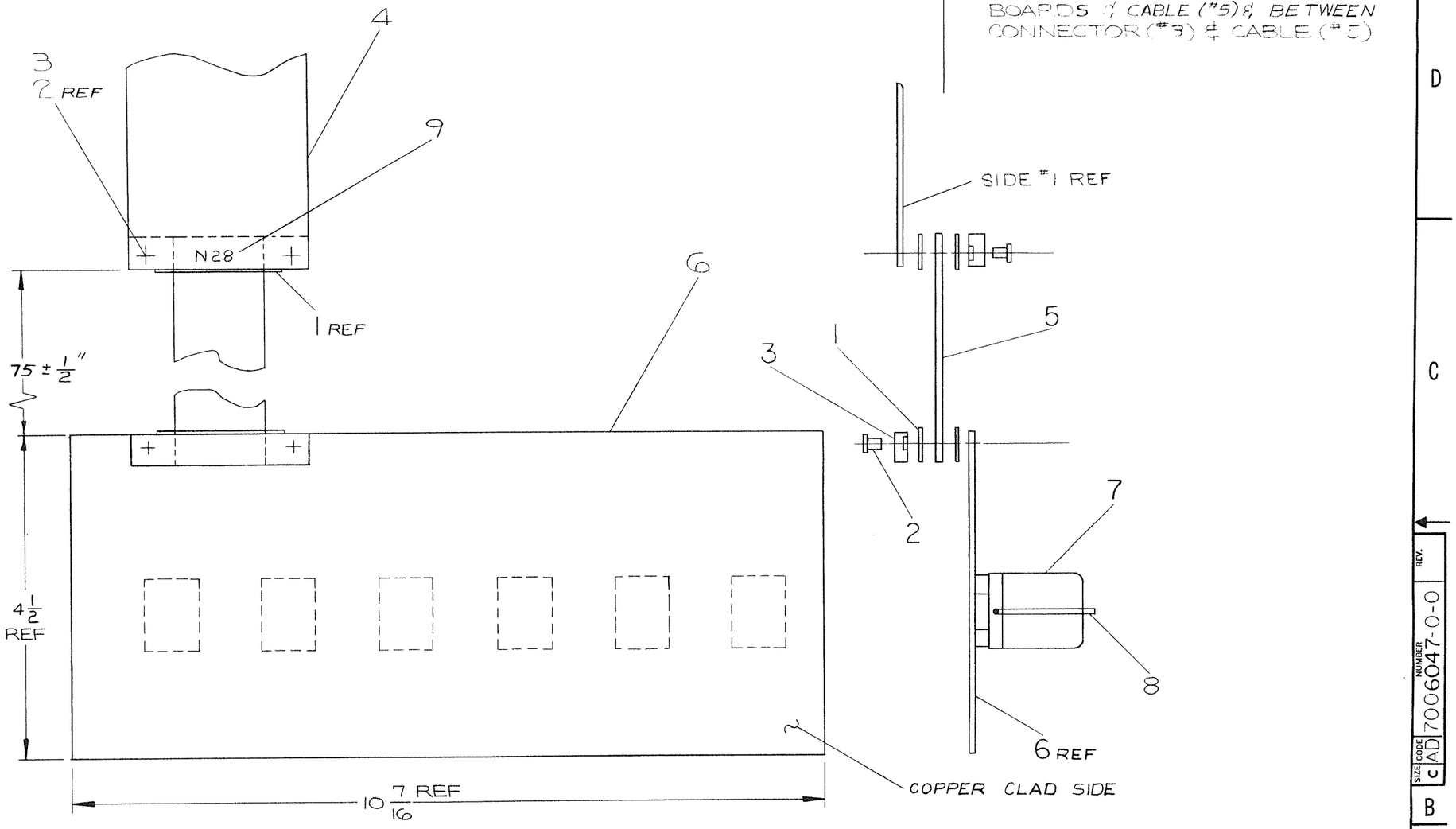
NOTES:
1. INSTALL TAPE (#6) BETWEEN BOARDS & CABLE (#5) & BETWEEN CONNECTOR (#3) & CABLE (#5)



FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP 12		PARTS LIST		

UNLESS OTHERWISE SPECIFIED

UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINAL SURFACE QUALITY ✓
REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL —//—

FINISH —//—

DRN. B. Cook	DATE	10/9/68
CHK'D R. Russ	DATE	1-9-69
ENG. L. Gal	DATE	3-3-69
PROJ. ENG. L. Gal	DATE	3-3-69
PROD. W Call	DATE	3/3/69

NEXT HIGHER ASSY
D-AD-7005963-0-0

SCALE —//—

SHEET 1 OF 1

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
RELAY BOARD ASSY

SIZE C | CODE AD | NUMBER 7006047-0-0

DIST.

REVISIONS | REV. | CHANGE NO. | CHK

SIZE C | CODE AD | NUMBER 7006047-0-0 | REV.

DEC FORM NO. DRC 100

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY R. COOK DATE 10/9/68	CHECKED K. RUSS DATE 1/8/69	SECTION 1
ENG DATE L. Gab 3-3-69	PROD W Call DATE 3/3/69	ISSUED SECT. 1

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	QUANTITY / VARIATION
1	9007834	TAPE #4032 ½ WIDEX 1-3/16 LG 3M CO	A/R
2	9006732	EYELET #GS-4-7 STIMPSON	4
3	1202704	CABLE CLAMP	2
4	M900	CABLE CONN M900	1
5	9105692 -1	FLEX PRINT CABLE 19 COND	A/R
6	C-IA-5408124-0-0	ETCH BOARD ASSY	1
7	1209349	RELAY #1368 PARELCO	6
8	1209423	RELAY CLIP PARELCO	6
9	A-DC-7407193-0-0	LOGIC DECALS	A/R

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO.
RELAY BOARD ASSY	C-AD-7006047-0-0	A	PL	7006047-0-0		
	SHEET 1 OF 1	DIST.	G			

DEC FORM NO.
DRA 110

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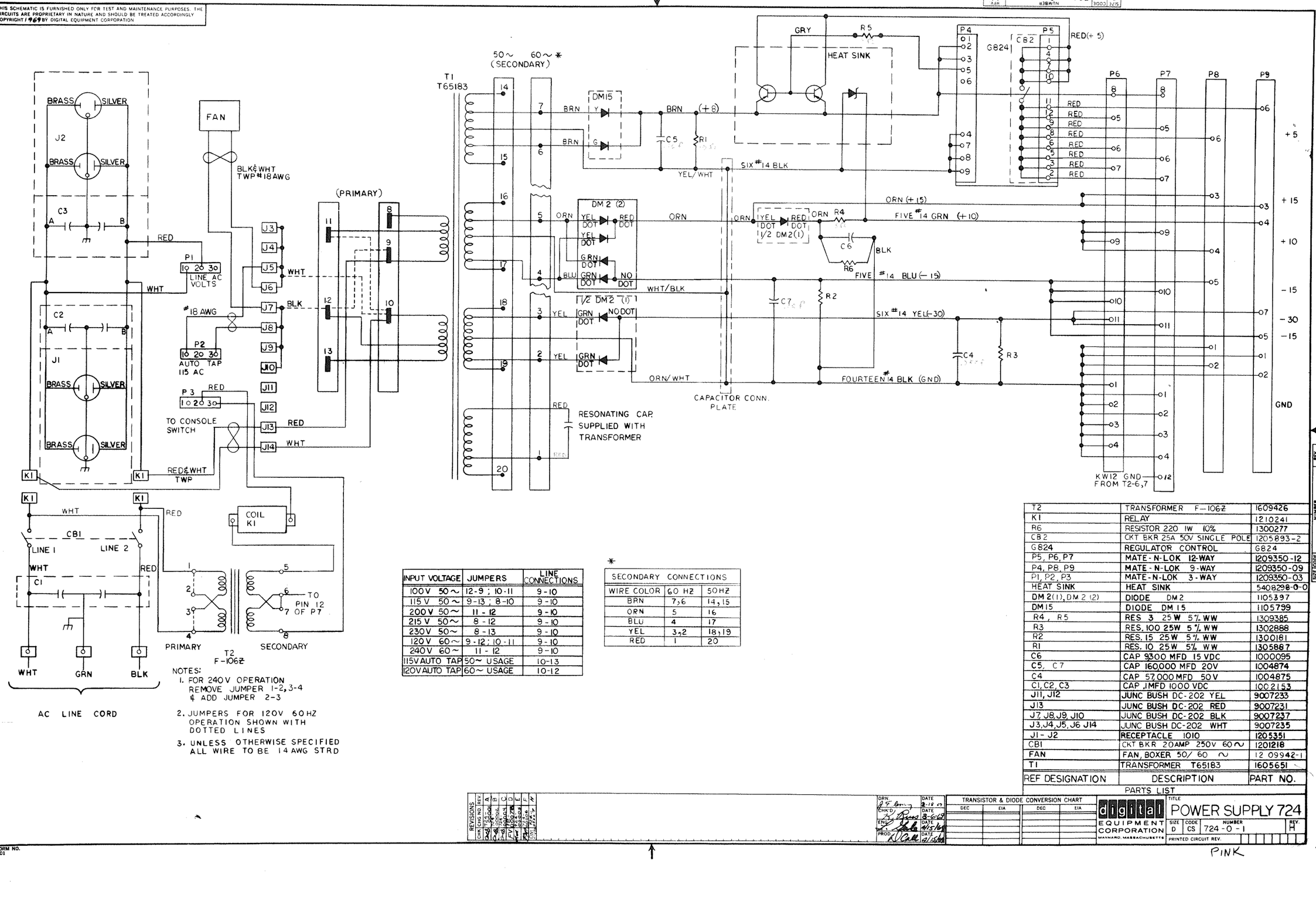

INPUT VOLTAGE	JUMPERS	LINE CONNECTIONS
100V 50~	12-9 ; 10-11	9-10
115 V 50~	9-13 ; 8-10	9-10
200 V 50~	11 - 12	9-10
215 V 50~	8 - 12	9-10
230V 50~	8 - 13	9-10
120V 60~	9-12 ; 10-11	9-10
240V 60~	11 - 12	9-10
115V AUTO TAP	50~ USAGE	10-13
120V AUTO TAP	60~ USAGE	10-12

*

SECONDARY CONNECTIONS		
WIRE COLOR	60 HZ	50HZ
BRN	7,6	14,15
ORN	5	16
BLU	4	17
YEL	3,2	18,19
RED	1	20

NOTES:
1. FOR 240 V OPERATION REMOVE JUMPER 1-2, 3-4 & ADD JUMPER 2-3
2. JUMPERS FOR 120V 60 HZ OPERATION SHOWN WITH DOTTED LINES
3. UNLESS OTHERWISE SPECIFIED ALL WIRE TO BE 14 AWG STRD

REF DESIGNATION	DESCRIPTION	PART NO.
T2	TRANSFORMER F-106Z	1609426
K1	RELAY	1210241
R6	RESISTOR 220 1W 10%	1300277
CB2	CKT BKR 25A 50V SINGLE POLE	1205893-2
G824	REGULATOR CONTROL	G824
P5, P6, P7	MATE-N-LOK 12-WAY	1209350-12
P4, P8, P9	MATE-N-LOK 9-WAY	1209350-09
P1, P2, P3	MATE-N-LOK 3-WAY	1209350-03
HEAT SINK	HEAT SINK	5408298-0-0
DM2(1), DM2 (2)	DIODE DM2	1105397
DM15	DIODE DM15	1105799
R4 , R5	RES 3 25W 5% WW	1309385
R3	RES. 100 25W 5% WW	1302888
R2	RES. 15 25W 5% WW	1300181
R1	RES. 10 25W 5% WW	1305887
C6	CAP 9300 MFD 15 VDC	1000095
C5, C7	CAP 160,000 MFD 20V	1004874
C4	CAP 57,000 MFD 50 V	1004875
C1, C2, C3	CAP .1MFD 1000 VDC	1002153
J11, J12	JUNC BUSH DC-202 YEL	9007233
J13	JUNC BUSH DC-202 RED	9007231
J7, J8, J9, J10	JUNC BUSH DC-202 BLK	9007237
J3, J4, J5, J6 J14	JUNC BUSH DC-202 WHT	9007235
J1 - J2	RECEPTACLE 1010	1205351
CB1	CKT BKR 20AMP 250V 60~	1201218
FAN	FAN, BOXER 50/ 60 ~	12 09942-1
T1	TRANSFORMER T65183	1605651

PARTS LIST

REVISIONS										
CHK	CHG NO	REV								
2nd	1	A								
3rd	2	B								
4th	3	C								
5th	4	D								
6th	5	E								
7th	6	F								
8th	7	H								

DRN. [illegible] DATE 2-18-69
CH'K'D. [illegible] DATE 3-6-69
ENG. [illegible] DATE 4/5/69
PROD. [illegible] DATE 4/15/69

TRANSISTOR & DIODE CONVERSION CHART			
DEC	EIA	DEC	EIA

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: POWER SUPPLY 724

SIZE	CODE	NUMBER	REV.
D	CS	724-0-1	H

PRINTED CIRCUIT REV.

PINK

DEC FORM NO. DRD 101

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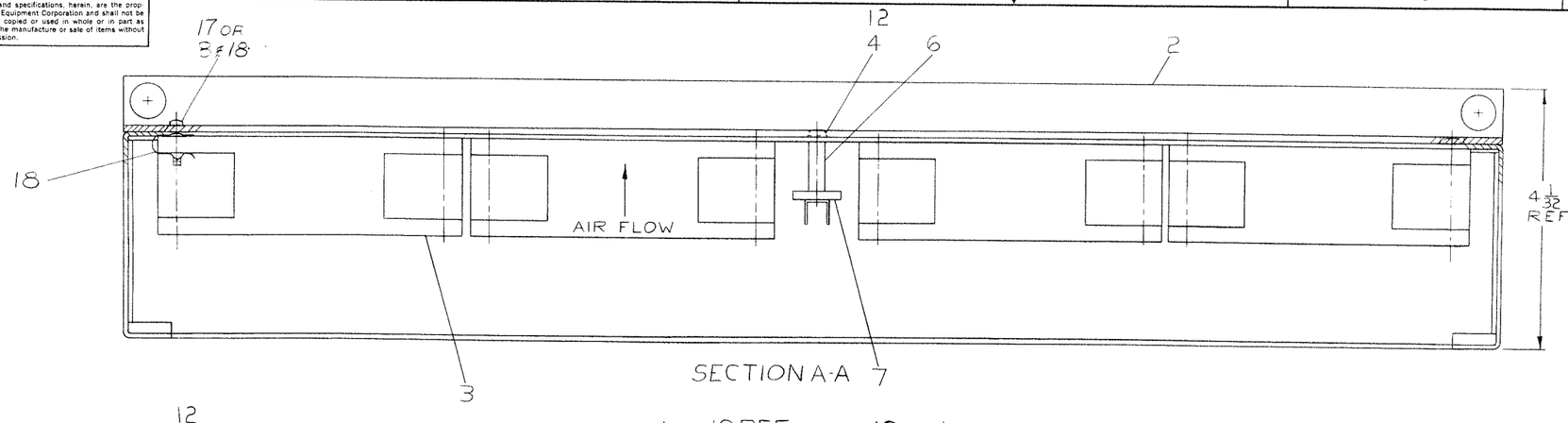
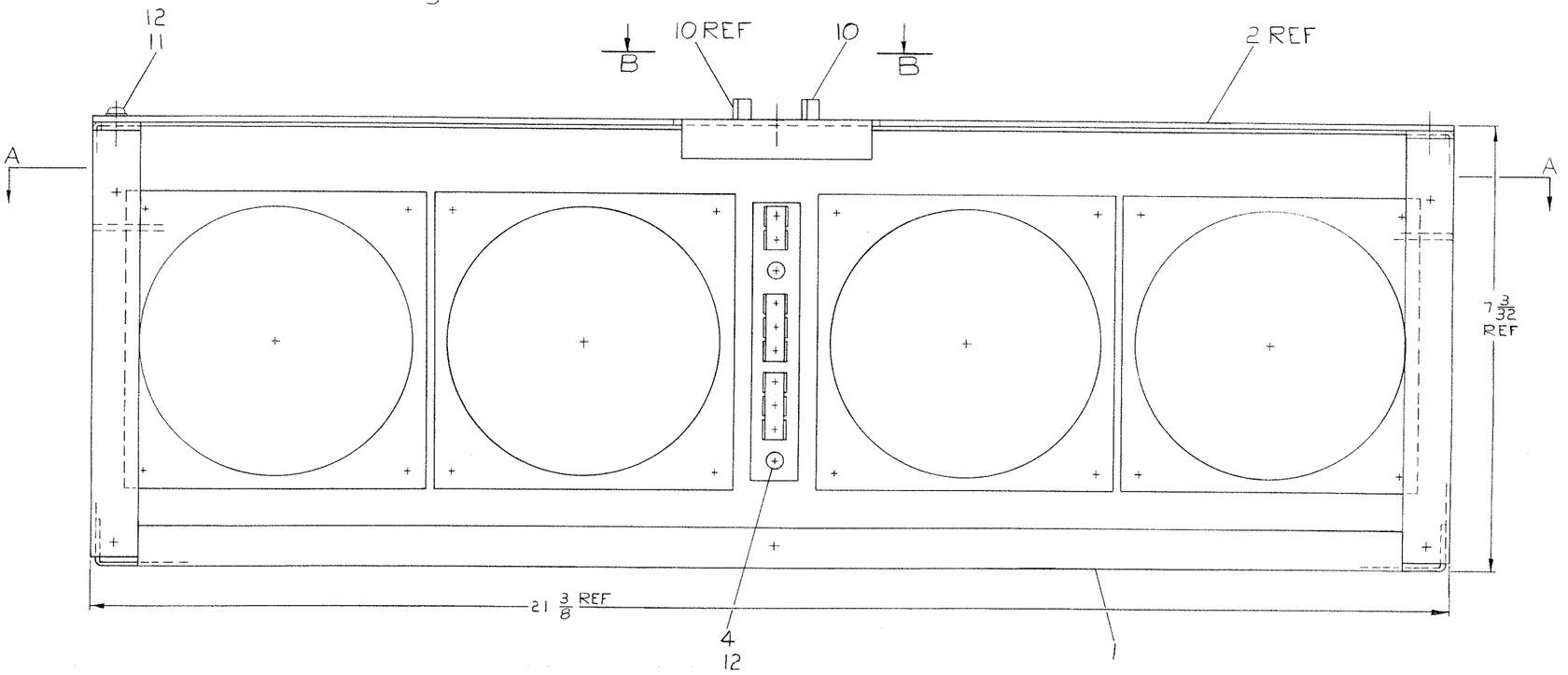
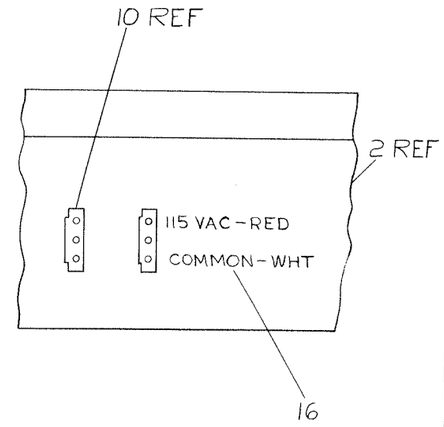
NOTES:
1. USE ITEM 17 WITH # 1209942 FAN, AND ITEM 8 & 18 WITH # 1209942-1 FAN.







VIEW B-B

REVISIONS					
CHK	CHANGE NO.	REV.			
	12-00014	A	REVISED & REDRAWN	T. Quinn 9-30-69	S. ZNAMIEROWSKI
	12-00028	B	D. NEVALA		
	12-00041	C	T. Quinn 12-10-69	GALE	
	12-00074	D	L. GALE		

FIRST USED ON OPTION/MODEL: PDP-12	QTY.	DESCRIPTION	PART NO. / ITEM NO.
	PARTS LIST		
UNLESS OTHERWISE SPECIFIED	DRN. J. Fleming	DATE 3-21-69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30' FINAL SURFACE QUALITY / REMOVE BURRS AND BREAK SHARP CORNERS	CHK'D.	DATE 4/4/69	TITLE: FAN HOUSING ASSY
	ENG.	DATE 4/4/69	
	PROJ. ENG.	DATE 4/4/69	
	PROD.	DATE 4/4/69	
MATERIAL	NEXT HIGHER ASSY: D-UA-PDP12-00		SIZE D CODE AD NUMBER 7005983-0-0 REV. D
FINISH	SCALE 1/1		
	SHEET 1 OF 2		DIST.

DEC FORM NO. DRD 100

SIZE D CODE AD NUMBER 7005983-0-0 REV. D

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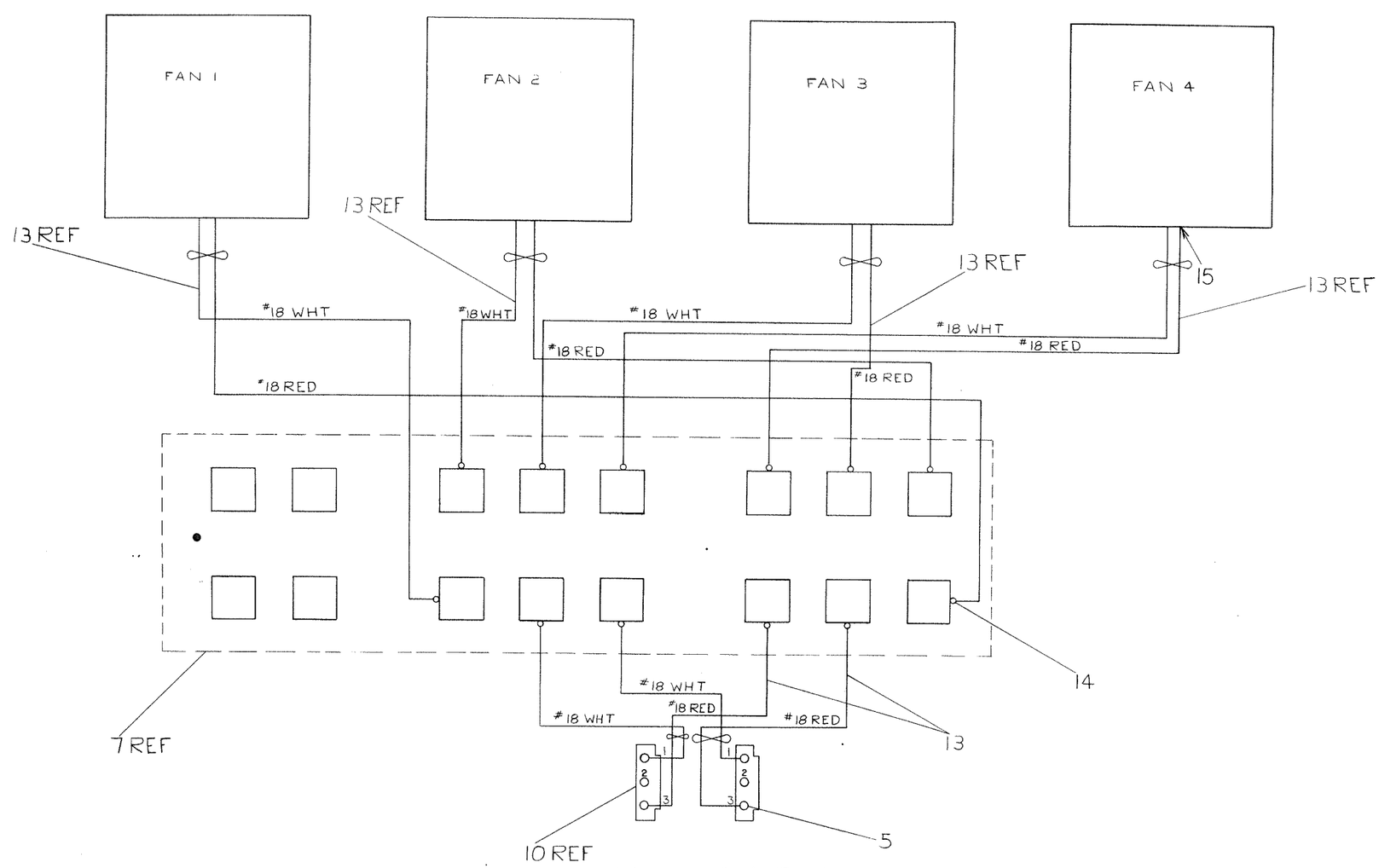

WIRING DIAGRAM

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
		PARTS LIST		

UNLESS OTHERWISE SPECIFIED

UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINAL SURFACE QUALITY
REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL

FINISH

DRN.	J. T. Conroy	DATE 3-21-69
CHK'D	Ken Ross	DATE 4/9/69
ENG.		DATE
PROJ. ENG.	L. G.	DATE 4/9/69
PROD.	A. Hall	DATE 4/9/69

NEXT HIGHER ASSY

SCALE NONE

SHEET 2 OF 2

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
FAN HOUSING
ASSY

SIZE	CODE	NUMBER	REV.
D	AD	7005983-0-0	D

DIST. G

REVISIONS		
REV.	CHANGE NO.	CHK

DEC FORM NO. DRD 100

SIZE D | CODE AD | NUMBER 7005983-0-0 | REV D

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY J. FLEMING	CHECKED K. RUSS	SECTION 1
DATE 3/21/69	DATE 4/2/69	
ENG [illegible]	PROD W Cole	ISSUED SECT. 1
DATE 4/2/69	DATE 4/11/69	

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	QUANTITY / VARIATION
1	E-IA-7407254-0-0	CHASSIS, FAN HOUSING	1
2	D-MD-7406948-0-0	COVER, FAN HOUSING	1
3	1209942 or 1209942-1	FAN	4
4	9006022-1	SCR PHL HD PAN #6-32 X 3/8 SST	4
5	1209379-01	PIN #60619-4 AMP	4
6	9006859	SPACER 1/4 AF X 3/4 X #6-32	2
7	C-IA-7405083-0-0	TERMINAL STRIP	1
8	9006024-1	SCR PHL HD PAN #6-32 X 1/2 SST	16
9	~~9006560~~	~~NUT KEPS #6-32~~	~~16~~
10	1209350-03	HOUSING SOCKET MATE-N-LOK	2
11	9006021-1	SCR PHL HD PAN #6-32 X 5/16	3
12	9006633	WASH INT TOOTH #6	7
13	9107430-29	WIRE #18 AWG STRD TWP (RED & WHT)	A/R
14	9006997	CONN SLDS #42025-1 AMP	12
15	9107305	TUBING SHRINKABLE #14 X 9/16 LG RED	8
16	A-DC-7406899-0-0	FAN DECALS	A/R
17	9006121	SCR, SELFTAPPING 8-32 x 3/8 LG	16
18	9008202	FAN CLIP	16
19	9007031	TIE WRAP SST-1B PANDUIT	5

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO.
FAN HOUSING ASSY	D-AD-7005983-0-0	A	PL	7005983-0-0	D	12-00074
	SHEET 1 OF 1	DIST. 6				

DEC FORM NO.
DRA 110